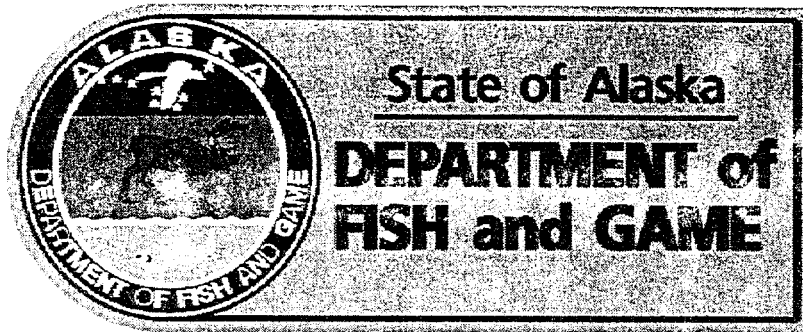


ABUNDANCE, AGE, SEX, AND SIZE STATISTICS
FOR SOCKEYE, CHUM AND PINK SALMON IN LOWER COOK INLET, 1998



by
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and
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Abstract

Aerial and foot surveys were used to estimate the 1998 sockeye *Oncorhynchus nerka*, chum *O. keta*, and pink *O. gorbusca* salmon escapements in the Lower Cook Inlet management area. Age, length and weight samples were obtained from five sockeye salmon stocks. A total of 284,029 sockeye, 4,647 chum and 1,457,819 pink salmon were harvested in this management area. Another 73,615 sockeye, 114,737 chum, and 918,406 pink salmon were estimated in the spawning escapement. The dominant ages of sockeye salmon throughout Lower Cook Inlet were 1.2 and 1.3. The proportion of sockeye salmon males ranged from a low of 25.6% in the Grouse Lake escapement sample to a high of 46.70% in the China Poot Bay sample. Sockeye salmon ranged in mean size from 482 mm in China Poot Bay to 533 mm in the commercial catch at Desire Lake and from 1.73 kg at Grouse Lake to 1.81 kg at Bear Lake.

KEY WORDS: Age, chum salmon, escapement, length, Lower Cook Inlet, pink salmon, *Oncorhynchus*, sex, sockeye salmon, weight.

INTRODUCTION

The Lower Cook Inlet (LCI) Management Area for commercial salmon fishing is composed of all waters west of Cape Fairfield in the Gulf of Alaska, north of Cape Douglas in Shelikof Straits, and south of Anchor Point in Cook Inlet. The area is divided into five management districts: Kamishak Bay, Barren Islands, Southern, Outer, and Eastern (Figure 1); fishing does not occur in the Barren Islands District. Purse seines and set gillnets are the only legal commercial gear types for salmon. Entry into the commercial fishery was limited in 1972.

In 1961, the Alaska Department of Fish and Game (ADF&G) began documenting LCI commercial catches of the five Pacific salmon species that occur in Alaska. Sockeye *Oncorhynchus nerka* and chum salmon *O. keta* catch sampling for age, weight, length (AWL) and sex began in 1970. AWL data between 1970 and 1986, and between 1988 and 1997, has been summarized by Schroeder (1984, 1985, 1986), Morrison (1987), Yuen et.al. (1989, 1990, 1991, 1992), Yuen and Bucher (1994a, 1994b, 1995) Otis, Bechtol and Bucher (1998) , Otis and Dickson (1999a) and Otis and Dickson (1999b). There was no catch-sampling program in 1987. Aerial and ground escapement surveys of pink salmon *O. gorbusca* began in 1960, chum salmon in 1974, and sockeye salmon *O. nerka* in 1969. Annual escapement data are summarized in annual management reports for the Lower Cook Inlet Area (eg., Bucher and Hammarstrom 1999).

Historically, fishing for a single species within a bay or drainage has lasted three to six weeks. Sockeye salmon fisheries begin as early as June while pink and chum salmon fisheries begin in July. Both fisheries end in August. Commercial fishing for chinook *O. tshawytscha* has begun as early as May and fishing for coho *O. kisutch* has extended into September. Current management strategy is structured around established fishing districts and sub-districts to facilitate management of discrete stocks. Commercial harvests are managed to meet predetermined escapement goals and to obtain adequate escapement for all run segments of a stock.

The purpose of the Lower Cook Inlet salmon catch-sampling program is to collect sockeye and chum salmon AWL data from purse seine fisheries that target discrete stocks. These single-stock fisheries normally account for over 90% of the total sockeye and chum catch from Lower Cook Inlet. The purse seine fisheries in Halibut Cove, Tutka Bay and Douglas River subdistricts, and the three set gillnet fisheries in Lower Cook Inlet were not sampled because they did not target specific local stocks. Chinook salmon samples also were not collected because total chinook salmon harvest is typically <1% of the total salmon catch. The coho and pink salmon catches normally are not sampled because they exhibit little inter-annual age composition variation.

This report summarizes the 1998 estimates of age and size composition of samples obtained from two discrete sockeye salmon fisheries and three sockeye salmon spawning populations. Monitoring changes in age composition allows fishery managers to prepare preseason forecasts of abundance and evaluate spawning escapement goals. This report also summarizes methods used to estimate total escapement from aerial and ground surveys.

METHODS

The Lower Cook Inlet salmon harvest has been managed as 16 independent purse seine fisheries, most of which target discrete stocks of sockeye, pink or chum salmon, each with their own escapement goal. Individual stocks occurred within distinct geographical sampling strata (Figure 2).

Most catch samples were obtained dockside when tenders were delivering catches from a single fishery. If tenders were expected to gather fish from several fisheries before returning to port, then samples were obtained aboard the tender before salmon from the targeted fishery were placed in the hold. The catch sampling crew interviewed the fishers delivering salmon to determine the origin of the catch before taking samples. If none of the above were possible then samples were obtained from a tender hold provided the skipper was interviewed to confirm that no salmon from an earlier sampling period were present.

There were several chum salmon runs which, due to expected low returns, were closed to commercial fishing this year. A small commercial catch (3,950 fish) occurred in the set gill net fishery in Seldovia Bay. Consequently, there were no chum AWL samples collected. Sockeye salmon age composition estimates were based on samples taken from two commercial fisheries (China Poot Bay and Desire Lake) and from the escapement at Bear, Grouse and Delight Lakes. Escapement samples were collected at Delight Lake for the second consecutive year while the Chenik Lake adult weir was discontinued due to low returns.

Salmon were measured from mid-eye to fork of tail (± 1 mm) using a *Limnoterra*² electronic fish measuring board (FMBIV). An *Ohaus*² (Model CT6000-S) electronic balance was used to weigh salmon to the nearest gram. Sex was generally determined from external secondary sexual characteristics (e.g. kipe, humped back, etc.). If necessary, a small incision near the vent was made to inspect the gonads and confirm the sex.

Scales were collected from commercial catch and escapement sampled fish to determine age. When possible, scales were collected from the *preferred area* of each salmon: an area 2-3 rows above the lateral line, posterior to the dorsal fin and anterior to the anal fin. Scales were cleaned and mounted ridged side up on a gummed card and then heat-pressed onto acetate cards for reading and archival. Images of scale impressions were magnified 35x and projected on a microfiche reader so the number of annuli per scale could be counted to determine age.

We used the European age designation system (Koo 1962). The first digit in this system refers to the number of freshwater annuli, the second digit refers to the number of marine annuli, and the total age is the sum of the two digits plus one. For example an age-1.2 salmon is a 4-year old salmon that spent 2 years in fresh water (first winter spent in the gravel as an alevin) and 2 years at sea.

²Vendor or product names are provided to document methods and do not constitute endorsement by ADF&G.

Age composition sample sizes for scale collection were set for each sampling stratum to estimate age proportions p_i from a population of k age groups simultaneously within a specified distance d of their true population age proportion π_i , 90% of the time ($1-\alpha$). That is,

$$Pr\left(\bigcap_{i=1}^k |p_i - \pi_i| \leq d\right) \geq 1 - \alpha, \quad 1$$

where d and α were respectively chosen to be 0.05 and 0.10 for all scale samples; $\alpha_i = 2(1 - \Phi(z_i))$, $\sum \alpha_i < \alpha$, $\Phi(z_i)$ = area under the standard normal distribution; and $z_i = d \sqrt{n_i} / \sqrt{p_i(1-p_i)}$. Thompson (1987) calculated a maximum sample size of 403 for a worse-case scenario when three age groups were present in equal numbers, where $d = 0.05$ and $\alpha = 0.01$. Any deviation in the number of age groups or unequal contributions by age group would require a smaller sample size.

Sample sizes for mean weights ranged between 5 and 50 depending on σ . Most sample sizes were around 20 for a 200-salmon sample, or 1 in 10 salmon of each sex.

Estimates of standard errors by age group were derived according to procedures for stratified random sampling described by Snedecor and Cochran (1967):

$$SE = \sqrt{\sum C_h^2 \frac{s_h^2}{n_h}}, \quad 2$$

where C_h = the salmon catch in the h th stratum, and s_h^2 = the sample variance in the h th stratum. Catch totals were obtained from harvest receipts (commonly referred to as fish tickets) which must be used to document each landing by a licensed fisher.

All pink and chum and most sockeye salmon escapement estimates in Lower Cook Inlet were based on periodic counts made by an observer either flying in a fixed-wing aircraft or walking along selected streams (Tables 1, 2 and 3). Sockeye salmon escapement estimates for English Bay, Delight, Desire and Chenik Lakes were based on counts made at weirs.

Pink and chum salmon generally accumulated in surveyed streams over time, however, many often died before the last survey was completed. Therefore, survey counts were usually adjusted for stream life: the average length of time a spawning pink or chum salmon was alive and available to surveyors. Our method of considering stream life in estimating total pink and chum salmon escapements was similar to that described by Johnson and Barrett (1988). First, daily surveys were converted to fish-days:

$$fish - days = \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1}), \quad 3$$

where d_i = Julian calendar date of survey i ($1 < d < 365$) and x_i = number of live pink or chum salmon observed in the study stream during survey i . Then, the area under the fish-day curve is found by integration:

$$area = \sum_{i=1}^{n+1} \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1}), \quad 4$$

where n = total number of surveys, $x_0 = x_{n+1} = 0$. Pink and chum salmon were not expected to enter streams before 1 July (d_0 = Julian date 191) or after 15 September (d_{n+1} = Julian date 258) unless otherwise noted.

Finally, dividing fish-days by stream life, in this case 17.5 d, yielded total escapement in numbers of salmon:

$$escapement = \frac{\sum_{i=1}^{n+1} \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1})}{17.5} . \quad 5$$

If this estimate was less than the greatest number of salmon observed on any one survey, we used the peak survey count instead of the result from equation (5) as the total escapement estimate. If both aerial and ground surveys were available, we selected the survey we believed to be the most accurate estimate of total escapement. Sockeye salmon tended to accumulate in surveyed lakes and most were often still alive after the last spawning surveys were completed. Accordingly, peak counts were used as an escapement index for this species, unless otherwise noted.

RESULTS

In 1998, Lower Cook Inlet salmon harvests included 284,029 sockeye, 4,647 chum, and 1,457,819 pink salmon; total escapements were estimated to be 73,615 sockeye, 114,737 chum, and 918,406 pink salmon (Tables 4, 5, and 6 respectively).

Sockeye salmon catch or escapement age, weight, and length (AWL) samples were collected in three commercial fishing districts: Southern, Outer, Eastern (salmon do not return to streams in the Barren Islands District). Samples from sockeye salmon fisheries were obtained between 3 June and 11 August. We were able to obtain AWL samples from the commercial catch or escapement from each sockeye stock in Lower Cook Inlet that was commercially fished in 1998 with the exception of Kirschner Lake and Neptune and Aialik Bays. One of the two catch samples met or exceeded the 90% confidence level where $d = 0.05$. Three escapement samples (Delight, Grouse and Bear Lakes) also met this criterion. A total of 2,602 readable scales was collected (Table 7).

Southern District Sockeye Salmon

The only Southern District fisheries assumed to be harvesting discrete sockeye salmon stocks occur in China Poot and Neptune bays. The runs originating from Leisure Lake, which drains into China Poot Bay, and Hazel Lake, which drains into Neptune Bay, supported the 2 largest sockeye fisheries in Lower Cook Inlet in 1998. Both of these runs were enhanced by ongoing lake stocking programs that began in 1976 and 1988 respectively. The 1998 common property commercial fisheries in China Poot and Neptune bays harvested 61,154 and 18,488 sockeye salmon respectively. Cost recovery efforts accounted for additional 19,294 and 1,285 sockeye salmon at China Poot and Neptune Bay respectively. Biological data on sockeye salmon returning to China Poot and Neptune bays have been collected since 1980 and 1993 respectively (Appendix A). The mean sockeye weight in our China Poot catch sample was 1.77 kg ($n = 51$) and the mean length was 482 mm ($n = 533$). The China Poot catch sample consisted of 89.5% age-1.2 sockeye salmon and 53.3% females (Table 8). The Neptune Bay fishery was not sampled in 1988. Since a barrier falls prevents upstream spawning migration into Leisure Lake, efforts were made to harvest all returning sockeye salmon in that terminal fishery.

The Halibut Cove purse seine and set gill net fishery exploits mixed stocks and harvested 62,301 sockeye salmon in 1998. Mixed stocks were also harvested in various set gillnet fisheries. The reported harvest of sockeye salmon near Barabara Creek was 1,288; 8,480 sockeyes were harvested in Kasitsna/Tutka bays, and 6,038 in Seldovia Bay. The common property fishery at English Bay reported a catch of 8,080 while the only large spawning escapement of sockeye salmon in the Southern District occurred in the English Bay River drainage where 14,136 sockeye salmon passed through the weir and an additional 6,202 sockeyes were harvested for the cost recovery program (Paul McCollum, Port Graham Hatchery Manager, personal communication).

Outer District Sockeye Salmon

Wild runs in Nuka Bay supported a commercial harvest of 15,986 sockeye salmon in 1998. Biological data on sockeye salmon returning to Nuka Bay have been collected since 1984 (Appendix B). Escapement scale samples were obtained from 491 sockeye salmon in Delight Lake from 7 July to 19 July. Delight Lake had a escapement index of 9,154 sockeye salmon. The sample from this lake consisted of 33.6% age-1.2 and 55.4 % age-1.3 sockeye salmon with an overall mean length of 526 mm (n=491; Table 9). A sample of fish from the commercial catch at Desire Lake collected on 17 July was dominated by age-1.3 (65.0%), the overall average length was 533 mm; (n=104, table 10). Desire Lake had an escapement index of 7,880 sockeyes; 1,090 sockeye salmon were estimated to have escaped into Delusion (a.k.a. Ecstasy Lake).

Eastern District Sockeye Salmon

The sockeye return to Aialik Lake supported a commercial harvest of 8,568 fish while the escapement index was estimated to be 4,900 fish. Biological data on sockeye salmon returning to Aialik Lake have been collected since 1983 (Appendix C) however, no AWL samples were collected in 1998.

The enhanced run in Resurrection Bay supported a common property commercial harvest of 1,229 sockeyes and a hatchery cost recovery harvest of 30,172 fish; 6,487 sockeye salmon were counted through the weir into Bear Lake (Jeff Hetrick, CIAA, personal communication). The Bear Creek escapement sample (n = 1,200) consisted of 83.4% age-1.2 fish at 479 mm and 14.5% age- 1.3 fish at 525 mm (Table 11). The Grouse Lake Sockeye salmon enhancement project produced an estimated 13,400 sockeyes all of which were harvested for cost recovery purposes. The escapement sample (n=254) taken at the Grouse Lake weir consisted of 74.4% females. The overall predominant age class was age-1.3 fish (76.40%) which had a mean length of 518 mm (Table 12).

Kamishak Bay District Sockeye Salmon

No sockeye salmon samples were collected in the Kamishak Bay district in 1998. The Chenik Lake Subdistrict remained closed due to the small run of 1,880 sockeye salmon. The Chenik Lake weir (in operation since 1989) was not installed and the sockeye escapement was estimated by means of aerial survey. Chenik Lake's natural run was supplemented with hatchery-reared sockeye juveniles as early as 1978, however, the run has been extremely weak in recent years due to an IHN epizootic. Biological data on sockeye salmon returning to Chenik Lake have been collected since 1985 (Appendix D).

The escapement at Mikfik Lake was estimated at 12,630 sockeye salmon. There were no commercial fishing efforts directed at Mikfik stocks even though the fishery was opened. The common property fishery at Kirschner Lake produced 8,112 sockeyes; 19,390 sockeyes were harvested for cost recovery goals.

Escapement indices to other Kamishak District streams included 1,000 sockeyes in Ursus Cove Lagoon Creek, 405 in Bruin River, and 4,140 in Amakdedori Creek.

Lower Cook Inlet Chum Salmon

A combination of poor market conditions and reduced returns to most drainages continued to precluded many fishers from targeting chum salmon in 1998. The majority of the commercial chum salmon catch (3,956 fish caught in the Southern District) was incidental to other fisheries. Consequently no chum salmon AWL samples were collected. The LCI commercial chum salmon harvest of 4,647 fish (Table 5.) represented less than 5% of the 20-year average and marked the eighth successive below-average season in Lower Cook Inlet. The McNeil River chum escapement (estimated at 23,530 fish) surpassed the low end of its escapement goal range of 20,000 to 40,000 fish for only the second time since 1989.

Lower Cook inlet pink salmon

Virtually all pink salmon exhibit a two-year life cycle so catch samples typically are not collected to determine age composition of returning stocks. However, catch and escapement data are compiled to facilitate in-season management of the commercial fishery and to forecast the following years return (Otis 1997). In contrast with last years 2,814,431 pink salmon harvest, the 1998 harvest decreased to 1,457,819 (Table 6). Over 90% of the total harvest occurred in the Southern District largely as a result of Tutka Hatchery production (Table 6). Over 71% of the Southern District catch went to Tutka Hatchery cost recovery and brood stock collection; the common property harvest totaled 504,759 fish. Only 13 of 23 pink salmon streams that were monitored for escapement achieved their desired escapement levels; 3 of 6 index streams in the Southern District attained the minimum escapement goal.

Discussion

Sockeye salmon mean lengths and weights within a brood year are expected to increase with increasing ocean age. For example, age-1.1, and 1.3 Aialik Lake male sockeye salmon from the 1980 brood year had mean lengths progressing from 355 mm to 515 mm to 569 mm (Appendix C). Whenever this trend was not observed, data were examined for keypunch errors, and scales were re-examined for aging errors. Some apparent size trend discrepancies resulted from sampling inadequacies. For instance, the mean weight of age-1.3 sockeye salmon from China Poot Bay was 2.09 kg, while age-2.3 sockeyes weighed only 1.95 kg (Table 8). This apparent discrepancy was probably not due to aging or keypunch errors. It was more likely related to both samples consisting of just one fish each, which, by itself did not provide a representative sample for its age group.

Occasional anomalies occurred in the freshwater residency period for some stocks. For example, age-1. fish has dominated Aialik Bay returns since catch sampling began there in 1983. However, 52.9% and 65.5% of juvenile sockeye remained in Aialik Lake a second year and smolted as age-2. fish in 1990 and 1991, respectively. East Nuka Bay returns experienced similar occurrences in 1988 and 1994. Inter-annual variation in age compositions is relatively common within sockeye salmon stocks Burgner (1991), however, casual mechanisms are not fully understood. While size may not be the sole determinant for smoltification, Weatherly and Gill (1995), report that growth is an important component influencing the duration of freshwater residence of sockeye salmon. Burgner (1991) lists several factors which may influence the freshwater growth of sockeye salmon, including: abundance and availability of food, temperature conditions, length of growing season, intensity of available light, competition, disease, feeding behavior in relation to predators; and movements to favorable habitats for feeding and survival.

While the overall sex ratio of returning adult salmon is typically even, males generally dominate the early portion of a run and females the latter, particularly for chum and pink salmon. Thus, the date samples are collected relative to the timing of the spawning run can influence the observed sex ratio of the sample. This temporal bias probably caused the skewed sex ratio observed in the 1998 sample from Grouse Lake (74.4% females; Table 12). Most of these samples were collected on late in the Grouse Lake return. Because temporal biases occur and size-at-age differences exist between male and female sockeye salmon (Burgner 1991), sampling dates are reported and age-weight-length data are stratified by sex in the appendices.

Escapement indices reported herein are primarily based on area-under-the-curve estimates that incorporate a 17.5 day streamlife. This streamlife estimate has been used for Lower Cook Inlet pink salmon for almost 30 years (Davis and Valentine 1970). While streamlife is recognized as a dynamic parameter, often varying by sex, segment of the run, and year, recent pink salmon streamlife work conducted in Prince William Sound suggests 17.5 days may be outside the commonly observed range of values (Bue et al. 1998). Until streamlife studies are conducted to confirm these data for Lower Cook Inlet streams, we are reluctant to modify our escapement indices. Nonetheless, readers should be aware that the historical escapement indices presented in this document could change in the future when a more appropriate streamlife estimated is adopted for Lower Cook Inlet pink and chum salmon.

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Table 1. Survey methods and total escapement algorithms used for sockeye salmon streams in Lower Cook Inlet, 1998.

Stream	Survey Method	Total Escapement Algorithm
Southern District		
English Bay	Weir	Sum of daily weir counts
Outer District		
Desire Lake	Aerial	Peak live count
Delight Lake	Aerial	Peak live count
Delusion Lake	Aerial	Peak live count
Eastern District		
Aialik Lake	Aerial	Peak live count
Salmon Creek	Ground	Peak live count
Grouse Creek	Ground	Peak live count
Bear Creek	Weir	Sum of daily weir counts
Kamishak District		
Ursus Lagoon	Aerial	Peak live count
Bruin Lake Creek	Aerial	Peak live count
Bruin Bay	Aerial	Peak live count
Amakdedori Creek	Aerial	Peak live count
Chenik Lake	Aerial	Peak live count
Paint River	Aerial	Peak live count
Mikfik Lake	Aerial	Peak live count
Little Kamishak River	Aerial	Peak live count
Douglas Reef	Aerial	Peak live count

Table 2. Survey methods and total escapement algorithms used for chum salmon streams in Lower Cook Inlet, 1998.

Stream	Survey Method	Total Escapement Algorithm	Start/stop dates Area-under-the-curve
Southern District			
Humpy Creek	Ground	17.5 day streamlife	7/1-9/15
Seldovia Creek	Ground	17.5 day streamlife	7/1-9/15
Port Graham Left	Ground	Peak live & carcass count	
Port Graham River	Ground	17.5 day streamlife	7/1-9/20
Outer District			
Dogfish Bay	Ground	17.5 day streamlife	7/1-9/15
Port Chatham	Ground	17.5 day streamlife	7/1-9/15
Windy River Left	Ground	17.5 day streamlife	7/1-9/15
Windy River Right	Ground	17.5 day streamlife	7/1-9/15
Rocky River	Aerial	17.5 day streamlife	7/1-9/15
Port Dick:			
Head End Creek	Ground	17.5 day streamlife	7/1-9/20
Slide Creek	Ground	17.5 day streamlife	7/1-9/30
Middle Creek	Aerial	17.5 day streamlife	7/1-9/20
Island Creek	Ground	17.5 day streamlife	7/1-9/30
Petrof River	Aerial	17.5 day streamlife	7/1-9/15
Nuka Island, South Cr.	Ground	17.5 day streamlife	7/1-9/15
James Lagoon	Aerial	17.5 day streamlife	7/1-9/15
Eastern District			
Tonsina Creek	Ground	17.5 day streamlife	7/1-9/30
Tonsina Left Creek	Ground	17.5 day streamlife	7/1-9/30
Salmon Creek	Ground	Peak carcass count	
Clear Creek	Ground	17.5 day streamlife	7/1-9/30
Sawmill Creek	Ground	17.5 day streamlife	7/1-9/30
Spring Creek	Ground	17.5 day streamlife	7/1-9/30
Kamishak Bay District			
Ininskin River	Aerial	17.5 day streamlife	7/25-9/30
Sugarloaf Creek	Aerial	17.5 day streamlife	7/27-9/30
North Head Creek	Aerial	17.5 day streamlife	7/27-9/30
Cottonwood Creek	Aerial	17.5 day streamlife	8/1-9/30
Browns Peak Creek	Aerial	17.5 day streamlife	7/1-9/15
Ursus Lagoon, Rt. hand	Aerial	17.5 day streamlife	7/26-9/30

Table 2. cont'd page 2 of 2

Stream	Survey Method	Total Escapement Algorithm	Start/stop Dates Area-Under-Curve
Kamishak Bay District			
Ursus Lagoon (Rt hand)	Aerial	17.5 day streamlife	7/15-9/30
Ursus Lagoon Creek	Aerial	17.5 day streamlife	7/15-9/30
Sunday Creek	Aerial	17.5 day streamlife	7/1-9/15
Bruin Bay River	Aerial	17.5 day streamlife	7/1-9/15
McNeil River ^a	Aerial	17.5 day streamlife	6/20-9/15
Little Kamishak River	Aerial	17.5 day streamlife	7/1-9/15
Strike Creek	Aerial	17.5 day streamlife	7/1-9/15
Big Kamishak River	Aerial	17.5 day streamlife	7/1-9/15
Douglas Reef	Aerial	17.5 day streamlife	7/1-9/15
Douglas Beach	Aerial	17.5 day streamlife	7/1-9/15

^a McNeil River Chum salmon aerial survey counts are only considered to be an index of abundance. In some years, the estimated number of salmon consumed by bears in McNeil River Wildlife Sanctuary has exceeded the peak aerial survey count.

Table 3. Survey methods and total escapement algorithms used for pink salmon streams in Lower Cook Inlet, 1998.

Stream	Survey Method	Total Escapement Algorithm	Start/stop Dates Area-Under-Curve
Southern District			
Humpy Creek	Ground	17.5 day streamlife	7/15-9/15
China Poot Creek	Ground	17.5 day streamlife	8/1-9/25
Tutka Creek	Ground	17.5 day streamlife	7/1-9/30
Seldovia River	Ground	17.5 day streamlife	7/1-9/20
Barabara Creek	Ground	17.5 day streamlife	7/1-9/30
Port Graham left	Ground	17.5 day streamlife	8/1-9/30
Port Graham River	Ground	17.5 day streamlife	8/1-9/30
Outer District			
Dogfish Bay	Ground	17.5 day streamlife	7/1-9/15
Port Chatham	Ground	Peak live&carcass count	
Chugach Bay	Aerial	17.5 day streamlife	7/1-9/30
Windy River Left	Ground	17.5 day streamlife	7/10-9/30
Windy River Right	Ground		7/10-9/30
Scurvy Creek	Ground	17.5 day streamlife	7/1-9/15
Rocky River	Ground	17.5 day streamlife	7/1-9/15
Port Dick:			
Head End Creek	Ground	17.5 day streamlife	7/15-9/30
Slide Creek	Ground	17.5 day streamlife	7/15-9/30
Middle Creek	Aerial	17.5 day streamlife	7/1-9/15
Island Creek	Ground	17.5 day streamlife	7/1-9/30
Nuka Island, South Creek	Ground	17.5 day streamlife	7/15-9/20
Berger Bay	Ground	17.5 day streamlife	7/1-9/15
James Lagoon	Ground	17.5 day streamlife	7/1-9/15
Eastern District			
Humpy Cove	Ground	Peak live & carcass count	
Tonsina Creek	Ground	17.5 day streamlife	7/1-9/30
Tonsina Left Creek	Ground	17.5 day streamlife	8/1-9/30
Salmon Creek	Ground	17.5 day streamlife	7/1-9/30
Grouse Creek	Ground	Peak live & carcass count	
Lost Creek	Ground	Peak live & carcass count	
Sawmill Creek	Ground	17.5 day streamlife	7/1-9/30
Spring Creek	Ground	17.5 day streamlife	7/1-9/30
Thumb Cove	Ground	17.5 day streamlife	7/1-9/30

Table 3 cont'd (page 2 of 2)

<i>Stream</i>	<i>Survey</i>	<i>Total Escapement Algorithm</i>	<i>Start/stop Dates Area-Under-Curve</i>
Kamishak Bay District			
Sugarloaf Creek	Aerial	Peak live count	
North Head Creek	Aerial	17.5 day streamlife	8/1-9/15
Browns Peak Creek	Aerial	17.5 day streamlife	7/1-9/15
Ursus Lagoon Right-hand	Aerial	Peak live count	
Ursus Lagoon	Aerial	17.5 day streamlife	7/1-9/15
Sunday Creek	Aerial	17.5 day streamlife	7/1-9/15
Bruin Bay Creek	Aerial	Peak live count	
Amakdedori Creek	Aerial	17.5 day streamlife	7/1-9/15

Table 4. Commercial sockeye salmon catches (including hatchery cost recovery) and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1998.

Subdistrict/System	Catch	Escapement ^a	Total Run
SOUTHERN DISTRICT			
Northshore Subdistrict			
Clearwater Slough		6	
Helicopter Creek		20	
Total Run			26
Humpy Creek		408	408
Halibut Cove	62,301		62,301
China Poot Bay			
Common Property Fishery	61,154		
Hatchery Cost Recovery	19,294		
China Poot Creek		380 ^b	
Total Run			80,828
Neptune Bay			
Common Property Fishery	18,488		
Hatchery Cost Recovery	1,285		
"Waterfall" Creek		12	
"Oxbow" Creek		325	
Total Run			20,110
Tutka/Kasitsna Bays & Tutka Creek	8,480	439	8,919
Barabara Creek	1,288		1,288
Seldovia Bay	6,038	8	6,046
Port Graham	3,652		3,652
English Bay			
Common Property Fishery	8,080		
Hatchery Cost Recovery	6,202		
English Bay Lakes		14,136 ^c	
Hatchery Broodstock		1,296	
Total Run			29,714
SOUTHERN DISTRICT TOTAL	196,262	17,030	213,292
OUTER DISTRICT			
Koyuktolik (Dogfish)		1	1
Port Chatham	5	1	6
Windy Left		2	2
Port Dick			
Head End		6	
Island Creek		1	
Total Run			7

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Table 4. (page 2 of 2)

Subdistrict/System	Catch	Escapement ^a	Total Run
OUTER DISTRICT (continued)			
East Arm Nuka Bay (McCarty Fiord)	15,986		
Delight Lake		9,154 ^d	
Desire Lake		7,880	
Delusion Lake		1,090	
Total Run			34,110
OUTER DISTRICT TOTAL	15,991	18,135	34,126
EASTERN DISTRICT			
Aialik Bay & Aialik Lake	8,568	4,900	13,468
Resurrection Bay North			
Common Property Fishery	1,229		
Hatchery Cost Recovery	30,172		
Hatchery Discards/Donations	4,305		
Bear Lake Escapement		6,487 ^e	
Hatchery Brood Stock		1,944	
Bear/Salmon Creeks		1,094	
Lost Creek		900	
Grouse Creek		840	
Total Run			46,971
EASTERN DISTRICT TOTAL	44,274	16,165	60,439
KAMISHAK BAY DISTRICT			
Ursus Cove Lagoon Creek		1,000	1,000
Kirschner Lake			
Common Property Fishery	8,112		
Hatchery Cost Recovery	19,390		
Total Run			27,502
Bruin Bay			
Bruin Lake Creek		360 ^b	
Bruin Bay River		405	
Total Run			765
Chenik Lake			
Amakdedori Creek		4,140	
Chenik Creek/Lake		1,880	
Total Run			6,020
Paint River		1,870 ^c	1,870
McNeil Cove (Mikfik Creek/Lake)		12,630	12,630
KAMISHAK BAY DISTRICT TOTAL	27,502	22,285	49,787
TOTAL LOWER COOK INLET	284,029	73,615	357,644

^a Escapement estimates derived from limited aerial surveys. Numbers represent unexpanded aerial live counts.

^b No freshwater escapement, prevented by barrier falls.

^c Weir counts.

^d Weir counts and video images.

^e No freshwater escapement, ladder not opened during 1998.

Table 5. Commercial chum salmon catches and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1998.

Subdistrict/System	Catch	Escapement ^a	Total Run
SOUTHERN DISTRICT			
Humpy Creek		101	101
Halibut Cove	71		71
China Poot Bay	15		15
Tutka Bay	852		852
Barabara Creek	422		422
Seldovia Bay & River	1,789	3,058	4,847
Port Graham & River	463	5,092	5,555
English Bay	344 ^b		344
SOUTHERN DISTRICT TOTAL	3,956	8,251	12,207
OUTER DISTRICT			
Dogfish Bay		9,760	9,760
Port Chatham	127	494	621
Windy Bay			
Windy Right Creek		606	
Windy Left Creek		482	
Total Run			1,088
Rocky Bay & River	327	700 ^c	1,027
Port Dick	145		
Port Dick (head end) Creek		1,840	
High Tech Creek		82	
Well Flagged Creek		12	
Slide Creek		367	
Middle Creek		2,427	
Island Creek		3,446	
Total Run			8,319
Nuka Island/Petrof River	0	462	462
East Arm Nuka Bay	12		12
OUTER DISTRICT TOTAL	611	20,678	21,289
EASTERN DISTRICT			
Aialik Bay	51		51
Resurrection Bay North	0		
Sawmill Creek		66	
Spring Creek		292	
Tonsina Creek		3,224	
Total Run			3,582
EASTERN DISTRICT TOTAL	51	3,582	3,633

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Table 5. (page 2 of 2)

Subdistrict/System	Catch	Escapement ^a	Total Run
KAMISHAK BAY DISTRICT			
Inisksin Bay	0		
Iniskin River		18,626	
Sugarloaf Creek		651	
North Head Creek		440	
Total Run			19,717
Cottonwood Bay & Creek	0	2,316	2,316
Ursus Cove	0		
Brown's Peak Creek		394	
Ursus Lagoon Right Creek		1,584	
Ursus Cove Lagoon Creek		3,036	
Total Run			5,014
Rocky Cove/Sunday Creek	0	713	713
Kirschner Lake	29 ^d		29
Bruin Bay & River	0	9,439	9,439
McNeil River	0	23,530	23,530
Kamishak/Douglas Reef	0		
Big Kamishak River		7,122	
Little Kamishak River		9,728	
Douglas Reef Creek		586	
Total Run			17,436
Douglas River/Douglas Beach Creek	0	4,061	4,061
KAMISHAK BAY DISTRICT TOTAL	29	82,226	82,255
TOTAL LOWER COOK INLET	4,647	114,737	119,384

^a Escapement estimates are derived from periodic ground or aerial surveys with stream life factors applied.

^b English Bay catches include 1 chum taken during hatchery sockeye cost recovery operations.

^c Rocky River escapement considered minimal estimate; due to the large numbers of pinks in the system, visual enumeration of chums via aerial surveys was nearly impossible.

^d Kirschner Lake catches include 9 chums taken during hatchery sockeye cost recovery operations.

Table 6. Commercial pink salmon catches (including hatchery cost recovery) and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1998.

Subdistrict/System	Catch	Escapement ^a	Total Run
SOUTHERN DISTRICT			
Humpy Creek		17,492	17,492
Halibut Cove	2,417		2,417
China Poot Bay/Creek	2,312 ^b	5,653	7,965
Neptune Bay	957		957
Tutka/Kasitsna Bays			
Common Property Fishery	504,759		
Hatchery Cost Recovery	792,542		
Hatchery Brood Stock		153,580	
Tutka Lagoon Creek		17,473	
Total Run			1,468,354
Barabara Creek	3,298	2,840	6,138
Seldovia Bay & River	7,398	31,535	38,933
Port Graham			
Common Property Fishery	598		
Hatchery Brood Stock		12,706	
Port Graham River		12,559	
Total Run			25,863
English Bay	761 ^b		761
SOUTHERN DISTRICT TOTAL	1,315,042	253,838	1,568,880
OUTER DISTRICT			
Dogfish Bay		6,695	6,695
Port Chatham	9,435	22,162	31,597
Chugach Bay		24,551	24,551
Windy Bay			
Windy Right Creek		19,522	
Windy Left Creek		12,934	
Total Run			32,456
Rocky Bay	35,003		
Scurvy Creek		260	
Rocky River		164,961	
Total Run			200,224
Port Dick	2,387		
Port Dick (head end) Creek		57,082	
High Tech Creek		1,343	
Well Flagged Creek		638	
Slide Creek		39,281	
Island Creek		83,585	
Total Run			184,316

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Table 6. (page 2 of 2)

Subdistrict/System	Catch	Escapement ^a	Total Run
OUTER DISTRICT (cont'd)			
Nuka Island/South Nuka Island Creek	41,101	14,000	55,101
East Arm Nuka Bay (McCarty Fiord)	14,246		
Delight Lake		300	
Desire Lake		6,156	
Delusion Lake		1,991	
Total Run			22,693
OUTER DISTRICT TOTAL	102,172	455,461	557,633
EASTERN DISTRICT			
Aialik Bay	38,828	350	39,178
Resurrection Bay North	1		
Bear/Salmon Creeks		13,230	
Grouse Creek		180	
Sawmill Creek		1,118	
Spring Creek		646	
Tonsina Creek		2,327	
Humpy Cove		1,180	
Thumb Cove		21,032	
Total Run			39,804
EASTERN DISTRICT TOTAL	38,829	40,153	78,982
KAMISHAK BAY DISTRICT			
Inisksin Bay			
North Head Creek		106	
Sugarloaf Creek		109	
Total Run			215
Ursus Cove/Brown's Peak Creek		7,869	7,869
Rocky Cove/Sunday Creek		24,029	24,029
Kirschner Lake	1,776 ^c		1,776
Bruin Bay & River		134,887	134,887
Kamishak/Douglas Reef		1,954	1,954
KAMISHAK BAY DISTRICT TOTAL	1,776	168,954	170,730
TOTAL LOWER COOK INLET	1,457,819	918,406	2,376,225

^a Escapement estimates are derived from periodic ground or aerial surveys with stream life factors applied.

^b China Poot and English Bay catches include 6 and 1 pinks respectively caught during hatchery sockeye salmon cost recovery.

^c Kirschner Lake pinks include 414 taken during common property fishing and 1,362 taken during hatchery sockeye cost recovery operations.

Table 7. Number of readable scales and corresponding confidence levels, for age composition estimates of Lower Cook Inlet sockeye and chum salmon samples, 1998.

				Confidence interval (d=0.05) ^a
Fishery	Dates	Sample Size	Type	
Sockeye Salmon				
Bear Lake	3 June-20 June	1,200	Scale	1.000
China Poot	15 July	553	Scale	1.000
Delight Lake	7 July- 19 July	491	Scale	0.955
Desire Lake	17 July	104	Scale	0.438
Grouse Lake	15 July-10 Sept	254	Scale	0.911
Total		2,602		

^a Simultaneous confidence interval for multiple age classes (Thompson 1987)

Table 8. Age, sex, and size composition of sockeye salmon commercial catch from China Poot Bay, 1998

Age Composition by Brood Year						
	1.1	1.2	2.1	1.3	2.2	2.3
total						
Sample Period : 15 July						
Males						
Percent	2.70	39.90	0.70	2.00	1.40	46.70
Sample Size	15	220	4	11	8	258
Mean Length	370	484	394	525	489	478
Std. Error	3	1	10	8	11	1
Sample Size	15	220	4	11	8	258
Mean Weight	0.86	1.87		2.09	1.84	1.82
Std. Error		0.08				0.07
Sample Size	1	15		1	1	18
Females						
Percent		49.60		1.10	2.40	53.30
Sample Size		275		6	13	295
Mean Length		483		535	496	484
Std. Error		1		11	6	1
Sample Size		275		6	13	295
Mean Weight		1.72			1.69	1.72
Std. Error		0.03			0.10	0.03
Sample Size		29			3	33
Both Sexes						
Percent	2.70	89.50	0.70	3.10	3.80	100.00
Sample Size	15	495	4	17	21	553
Mean Length	370	483	394	529	493	482
Std. Error	3	0	10	6	5	0
Sample Size	15	495	4	17	21	553
Mean Weight	0.86	1.79		2.09	1.75	1.77
Std. Error		0.04			0.10	0.04
Sample Size	1	44		1	4	51

Table 9. Age, sex, and size composition of sockeye salmon escapement from Delight Lake, 1998.

	Age Composition by Brood Year					
	1.2	1.3	2.2	2.3	3.3	total
Sample Period: 7 July to 19 July						
Males						
Percent	9.60	29.80	2.20	1.00		42.60
Sample Size	47	146	11	5		209
Mean Length	494	566	513	569		547
Std. Error	3	2	8	8		1
Sample Size	47	146	11	5		209
Females						
Percent	24.00	25.60	4.50	3.10	0.20	57.40
Sample Size	118	126	22	15	1	282
Mean Length	485	536	495	535	545	511
Std. Error	2	1	5	7		1
Sample Size	118	126	22	15	1	282
Both Sexes						
Percent	33.60	55.40	6.70	4.10	0.20	100.00
Sample Size	165	272	33	20	1	491
Mean Length	488	552	501	543	545	526
Std. Error	1	1	4	5		1
Sample Size	165	272	33	20	1	491

Table 10. Age, sex, and size composition of sockeye salmon commercial catch from Desire Lake, 1998.

Age Composition by Brood Year				
	1.2	1.3	2.2	total
Sample Period: 17 July				
Males	8	30	2	40
Percent	6.67	25.00	1.67	33.33
Sample Size	7	26	2	35
Mean Length	517	570	525	557
Std. Error	4	4	14	3
Sample Size	7	26	2	35
Females	31	48	1	80
Percent	25.83	40.00	0.83	66.67
Sample Size	27	41	1	69
Mean Length	491	541	540	522
Std. Error	4	3		2
Sample Size	27	41	1	69
Both Sexes	39	78	3	120
Percent	32.50	65.00	2.50	100.00
Sample Size	34	67	3	104
Mean Length	496	552	530	533
Std. Error	3	2	14	2
Sample Size	34	67	3	104

Table 11. Age, sex, and size composition of sockeye salmon escapement from Bear Creek, 1998.

Age Composition by Brood Year							
	1.1	0.3	1.2	1.3	2.2	2.3	total
Sample Period : 20 June							
Males							
Percent	0.10	0.10	32.10	6.80	0.60	0.10	39.80
Sample Size	1	1	387	81	7	1	478
Mean Length	355	495	483	531	495	520	491
Std. Error			1	2	10		1
Sample Size	1	1	387	81	7	1	478
Mean Weight	0.80	2.00	1.84	2.48	2.20	2.20	1.95
Std. Error			0.01	0.04	0.19		0.01
Sample Size	1	1	386	81	7	1	477
Females							
Percent	0.10		51.30	7.70	0.60	0.50	60.20
Sample Size	1		616	92	7	6	722
Mean Length	330		477	519	481	501	482
Std. Error			1	2	4	13	0
Sample Size	1		616	92	7	6	722
Mean Weight	0.60		1.65	2.14	1.73	2.02	1.71
Std. Error			0.01	0.03	0.05	0.16	0.01
Sample Size	1		616	92	7	6	722
Both Sexes							
Percent	0.20	0.10	83.40	14.50	1.20	0.60	100.00
Sample Size	2	1	1,003	173	14	7	1,200
Mean Length	342	495	479	525	488	504	486
Std. Error			0	1	6	13	0
Sample Size	2	1	1,003	173	14	7	1,200
Mean Weight	0.70	2.00	1.72	2.30	1.97	2.05	1.81
Std. Error			0.01	0.02	0.10	0.16	0.01
Sample Size	2	1	1,002	173	14	7	1,199

Table 12. Age, sex, and size composition of sockeye salmon escapement from Grouse Lake, 1998.

Age Composition by Brood Year							
	1.1	1.2	2.1	1.3	2.2	2.3	total
Sample Period : 15 July - 10 September							
Males							
Percent	14.40	2.40	0.40	7.20	0.40		24.80
Sample Size	36	6	1	18	1		62
Mean Length	341	471	320	508	470		404
Std. Error	3	8		11			3
Sample Size	36	6	1	18	1		62
Mean Weight	0.69	1.62	0.60	2.56	1.80		1.34
Std. Error	0.02	0.08		0.22			0.06
Sample Size	36	6	1	18	1		62
Females							
Percent	0.40	4.00		70.00		0.80	75.20
Sample Size	1	10		175		2	188
Mean Length	335	470		519		525	515
Std. Error		7		1		4	1
Sample Size	1	10		175		2	188
Mean Weight	0.60	1.61		2.24		2.50	2.20
Std. Error		0.08		0.02		0.20	0.02
Sample Size	1	10		175		2	188
Both Sexes							
Percent	14.80	6.40	0.40	77.20	0.40	0.80	100.00
Sample Size	37	16	1	193	1	2	250
Mean Length	341	470	320	518	470	525	488
Std. Error	3	5		1		4	1
Sample Size	37	16	1	193	1	2	250
Mean Weight	0.69	1.61	0.60	2.27	1.80	2.50	1.99
Std. Error	0.02	0.06		0.03		0.20	0.02
Sample Size	37	16	1	193	1	2	250

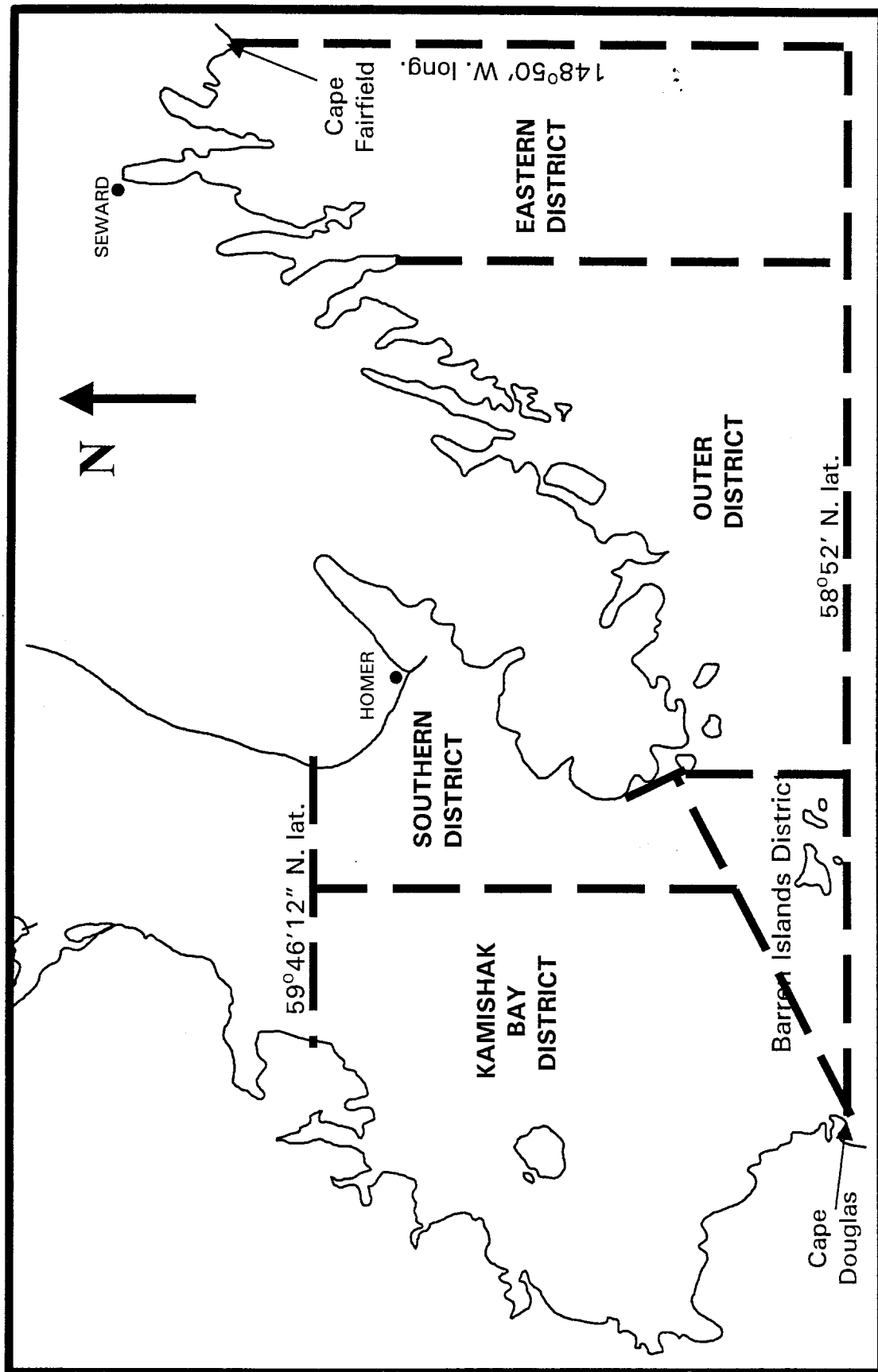


Figure 1. Lower Cook Inlet salmon management districts (not drawn to scale)

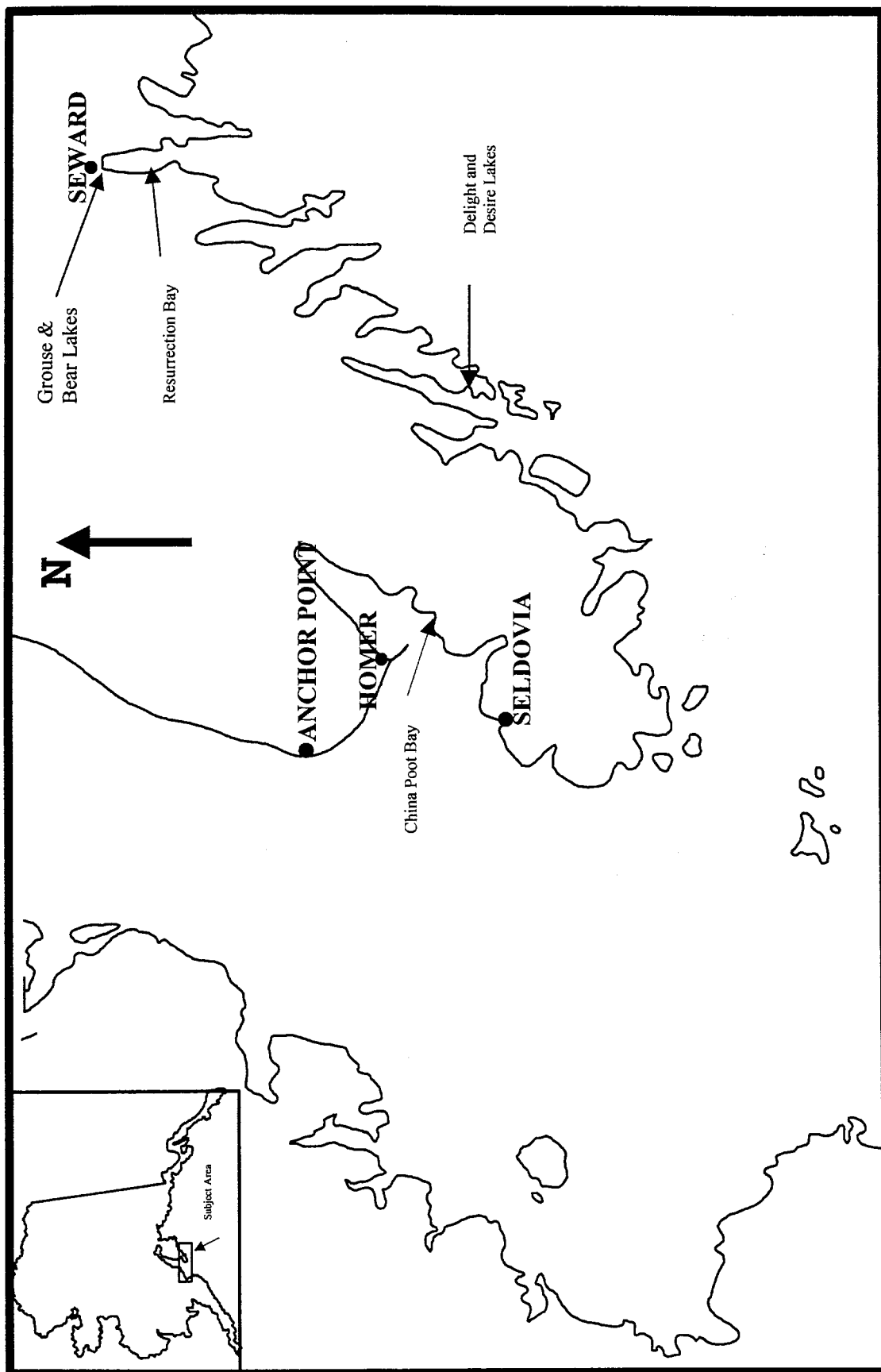


Figure 2. Location of 5 Lower Cook Inlet salmon catch and escapement areas sampled in 1998.

APPENDICES

Appendix A. China Pool: age, and mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

Brood Year	Age Group																							
	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n	2.4	SE	n
Male mean length (mm) by brood year																								
1975							512	NA	1															
1976				515	4.11	37	540	NA	1	-----														
1977				489	12.22	25	-----						436	11.00	2	-----			580	35.00	2			
1978				-----			542	NA	1				-----			507	20.00	2	565	NA	1			
1979	-----			514	1.24	247	526	13.63	9	568	NA	1				513								
1980	422	29.61	5	494	1.36	258	539	3.15	34							497	3.38	45				-----		
1981				481	2.24	80	504	15.26	5	-----														
1982				498	10.48	7	-----												546	4.00	21			
1983				-----			534	7.00	19				-----			510	1.00	256	558	9.00	8			
1984	-----			498	2.00	204	560	5.00	35				379	12.00	20	513	2.00	70	530	NA	1			437 22.00 2
1985	351	4.00	20	489	1.00	439	554	5.00	27				407	NA	1	479	4.00	43	554	15.00	4			
1986	366	7.00	4	474	2.00	110	524	12.00	22				352	5.00	3	485	2.00	171	541	9.00	3			
1987	361	4.00	8	478	2.00	259	546	5.00	9				359	7.00	7	493	2.00	117						
1988				484	2.00	125	541						398	11.00	5	518			503	NA	1			
1989	383	3.00	12	495			523	3.00	32				394			483	6.00	11						
1990				465	1.00	150	520	4.00	19							497	9.00	4						
1991				478	1.00	128							403	4.00	3									
1992	391	3.00	21				540	3.00	46							509	6.00	9						
1993	394	6.00	25	492	1.00	210	525	8.00	11							489	11.00	8						
1994	407	19.00	8	484	1.00	220							394	10.00	4									
1995	370	3.00	15																					
Female mean length (mm) by brood year																								
1975							523	24.51	3							508	14.00	2				-----		
1976							-----																	
1977				511	4.16	36	-----																	
1978				490	6.72	51	-----						512	22.00	2	-----			569	NA	1			
1979				-----			573	28.50	2	511	NA	1	-----			525	10.00	2						
1980	-----			513	1.09	296	549	9.41	3							501	6.00	19	547	13.32	3			
1981				494	1.62	186	539	4.53	27							493	3.46	35				-----		
1982				482	1.68	78	-----									496	NA	1	-----					
1983				493	32.46	3	-----			632	NA	1				-----			525	15.00	8			
1984				-----			551	4.00	23				-----			507	1.00	217	562	10.00	6			
1985	-----			494	1.00	197	565	5.00	23				441	56.00	2	517	4.00	41	574	NA	1			486 NA 1
1986	340	NA	1	488	1.00	319	546	6.00	19							473	2.00	66	550	23.00	4			
1987				472	2.00	163	533	7.00	25							478	2.00	151	538	NA	1			
1988				477	2.00	193	524	9.00	8							491	2.00	112						
1989				485	2.00	103	539									521			513	NA	1			
1990				495			521	2.00	40	492	NA	1				472	4.00	15						
1991				464	2.00	79	528	4.00	46				384	2.00	2	466	8.00	4						
1992				490	1.00	277	547	2.00	55				387	NA	1	495	7.00	4	517	NA	1			
1993				492	1.00	183	535	11.00	6				514	NA	1	496	6.00	13						
1994	386	NA	1	483	1.00	275																		
1995																								

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Brood				Age Group																											
Year	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	N	2.4	SE	n	3.1	SE	n	3.2	SE	n	
Male mean weight (kg) by brood year																															
1975							2.20	NA	1																						
1976				2.17	0.06	26	2.61	NA	1	----									----							----					
1977				2.17	0.14	18	----						1.14	NA	1	----				2.95	0.55	2									
1978				----			2.65	NA	1							2.03	0.13	2	2.90	NA	1										
1979	----			2.14	0.02	193	2.66	0.12	8	3.85	NA	1				2.26	0.11	7													
1980	0.94	0.07	5	2.02	0.02	178	2.91	0.05	23							2.43	0.04	24													
1981				2.26	0.03	40	2.14	0.21	5	----									----							----					
1982				1.96	0.12	7	----									----				2.83	0.03	2									
1983				----			2.70	NA	1				----			2.45	0.18	11													
1984	----			2.38	0.23	20	3.63	NA	2				1.80	0.07	4	2.00	0.10	2													
1985	0.70	0.06	3	1.83	0.06	22	2.83	0.59	5							1.70	0.23	3	2.10	NA	1										
1986	0.50	NA	1	1.54	0.06	11	2.46	0.15	3							1.80	0.09	23													
1987	0.70	NA	2	1.69	0.05	23	2.40	NA	2				0.50	NA	1	1.81	0.03	25													
1988				1.79	0.06	19										2.17															
1989	0.82	0.03	2	1.57			1.63	0.21	5							1.16	NA	1													
1990				1.23	0.06	17																									
1991				1.70	0.06	12																									
1992	0.99	0.04	2				2.36	0.15	6							2.37	0.06	2													
1993	0.87	0.12	3	1.94	0.06	15	2.09	NA	1				1.92	NA	1	1.84	NA	1													
1994				1.87	0.08	15																									
1995	0.86	NA	1																												

Female mean weight (kg) by brood year

1975							2.40	0.40	2							1.95	0.15	2												
1976				2.00	0.06	31				----																				
1977				1.98	0.11	24	----												2.70	NA	1									
1978				----			2.85	0.55	2	2.50	NA	1	----			2.03	0.18	2												
1979	----			1.98	0.02	231	2.80	0.15	3							1.97	0.09	14	2.88	0.08	3									
1980				1.90	0.03	118	2.91	0.08	16							2.26	0.06	26												
1981				2.11	0.02	32				----						1.70	NA	1	----											
1982				1.80	0.46	3	----									----			2.20	NA	2									
1983				----									----			2.07	0.12	22												
1984	----			1.77	0.06	13										2.75	NA	1	2.60	NA	1									
1985				1.76	0.05	8										1.51	0.06	6												
1986				1.49	0.05	17	2.10	0.30	2							1.63	0.09	16												
1987				1.57	0.04	22	2.10	0.09	3							1.72	0.03	15												
1988				1.67	0.05	16	2.51																							
1989				1.54			1.66	0.16	7							1.25	0.11	2												
1990				1.15	0.07	11	2.13	0.21	5							1.33	0.11	2												
1991				1.65	0.03	33							0.77		1															
1992							2.41	0.14	4							2.14	NA	1												
1993				1.85	0.04	20							1.92	NA	1	1.69	0.10	3												
1994	1.02	NA	1	1.72	0.03	29																								

Brood Year	Age Group												
	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3
Male harvest (number of fish) by brood year													
1975					152								
1976				5,620	136	----			----		----		
1977		----		3,394	----		272	----	266				
1978	----			----	133		----	266	216				
1979			----	32,845	1,941	190		1,509					----
1980			655	55,632	6,444			8,528		----		----	
1981				15,161	4,781	----			----		----		
1982		----		6,694	----			----	1,406				
1983	----			----	1,326		----	17,249	307				
1984			----	12,862	1,324		1,174	2,592	68			384	
1985			1,126	16,595	1,823		35	2,904	322				
1986			153	7,429	2,141		203	16,172	386				
1987			540	25,628	1,157		452	15,044					
1988				16,073	2,295		643	2,868	88				
1989			1,543	19,789	2,821		287	970					
1990			287	13,225	3,147			662					
1991				21,200			497						
1992			3,478										
1993			5,452	17,665	1,609			1,126					
1994			651	32,099			563						
1995			2,172										
Female harvest (number of fish) by brood year													
1975					456			304		----		----	
1976				5,468		----			----		----		
1977		----		6,926	----		272	----	133				
1978	----			----	266	216	----	266					
1979			----	39,360	647			4,097	569				----
1980				40,106	5,117			6,633		----		----	
1981				14,783		----		956	----		----		
1982		----		2,869	----	56		----	514				
1983	----			----	1,567		----	14,203	229				
1984			----	11,876	915		113	1,567	68			192	
1985			56	12,078	1,283			4,457	619				
1986				11,008	3,015			17,386	129				
1987				22,622	1,029			14,400					
1988				13,244	2,008			2,008	88				
1989				38,146	3,527	166		1,322					
1990				6,966	7,619		176	662					
1991				54,656			166						
1992									161				
1993				15,364	885			1,931					
1994			87	39,902									
1995													

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Year	Age Group																	
	1.1	n	1.2	n	1.3	n	1.4	n	2.1	N	2.2	n	2.3	n	2.4	n	3.1	n
Male age composition by harvest year																		
1980			46.83	37	1.27	1												
1981			30.85	25	1.24	1			2.47	2								
1982																		
1983	0.90	5	44.27	247	0.18	1					0.36	2	0.36	2				
1984			53.31	258	1.86	9					1.45	7	0.21	1				
1985			26.40	80	11.22	34	0.33	1			14.85	45						
1986			43.75	7	31.25	5												
1987																		
1988	1.77	20	20.25	204	2.09	19			1.85	20	27.15	256	2.21	21				
1989	0.43	4	46.36	439	3.70	35			0.10	1	7.24	70	0.86	8				
1990	1.81	8	24.94	110	6.12	27			0.68	3	9.75	43	0.23	1				
1991			28.82	259	2.41	22			0.51	7	18.18	171	0.36	4			0.43	2
1992	2.42	12	25.25	125	1.82	9			1.01	5	23.64	117	0.61	3				
1993																		
1994			45.32	150	9.67	32					3.32	11	0.30	1				
1995	3.77	21	22.98	128	3.41	19			0.54	3	0.72	4						
1996	4.45	25	39.54	222	2.97	17					0.33	2						
1997	1.50	8	40.70	210	8.90	46					1.70	9						
1998	2.70	15	39.90	220	2.00	11			0.70	4	1.40	8						
Female age composition by harvest year																		
1980			45.57	36	3.80	3					2.53	2						
1981			62.96	51					2.47	2								
1982																		
1983			53.05	296	0.36	2					0.36	2	0.18	1				
1984			38.43	186	0.62	3	0.21	1			3.93	19						
1985			25.74	78	8.91	27					11.55	35	0.99	3				
1986			18.75	3							6.25	1						
1987																		
1988	0.09	1	18.69	197	2.47	23	0.09	1	0.18	2	22.36	217	0.81	8				
1989			33.74	319	2.56	23					4.38	41	0.64	6				
1990			36.96	163	4.31	19					14.96	66	0.23	1				
1991			25.44	193	3.39	25					19.55	151	0.70	4			0.22	1
1992			20.81	103	1.62	8					22.62	112	0.2	1				
1993																		
1994			23.87	79	12.09	40			0.6	2	4.53	15	0.3	1				
1995			59.25	330	8.26	46	0.18	1	0.18	1	0.72	4						
1996			49.42	277	3.13	18					0.16	1						
1997	0.20	1	35.40	183	10.6	55			0.20	1	0.80	4						
1998			49.60	275	1.10	6					2.40	13	0.20	1				
Both Sexes																		
1980			92.40	73	5.07	4					2.53	2						
1981			93.81	76	1.24	1			4.94	4								
1982																		
1983																		
1984			91.74	444	2.48	12	0.21	1			5.38	26	0.21	1				
1985			52.14	158	20.13	61	0.33	1			26.40	80	0.99	3				
1986			62.50	10	31.25	5					6.25	1						
1987																		
1988	1.86	21	38.94	401	4.56	42	0.09	1	2.03	22	49.51	473	3.02	29				
1989	0.43	4	80.10	758	6.26	58			0.10	1	11.62	111	1.50	14				
1990	1.81	8	61.90	273	10.43	46			0.68	3	24.71	109	0.46	2				
1991			54.26	452	5.80	47			0.51	7	37.73	322	1.06	8			0.65	3
1992	2.42	12	46.06	228	3.44	17			1.01	5	46.26	229	0.81	4				
1993																		
1994			69.19	229	21.76	72			0.60	2	7.85	26	0.60	2				
1995	3.77	21	82.23	458	11.67	65	0.18	1	0.72	4	1.44	8						
1996	4.45	25	88.98	499	6.10	35					0.49	3						
1997	1.70	9	76.10	393	19.50	101			0.20	1	2.50	13						
1998	2.70	15	89.50	495	3.10	17			0.70	4	3.80	21	0.20	1				

Appendix B. East Nuka Bay: age, and mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

[illegible]

-continued

^a Delight Lake escapement; ^b Desire Lake escapement; ^c Delight and Desire lakes escapements combined

-continued-

Year	Age Group														
	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3	
Male harvest (number of fish) by brood year															
1977														209	
1978														----	
1979										2,713	----		----	----	
1980						30,057	----		2,922	----	----	----	----	28	
1981					3,757	----	----		----	----		----			
1982			----	----	----			----	----	1,993					
1983	----	----		----	----	1,123	----		562	466				7	
1984	----			----	281	2,579			93	242			4	----	
1985		31			1,398	1,401			453	216	----		----		
1986	31	14			408	358	----		82	----		----			
1987			----		56	----			----	728					
1988			----		----	478		----	166	196					
1989	----	28		----	353	1,054			588	22					
1990					710	4,508		24	22						
1991					2,588					181					
1992						1,973			125	160					
1993					624	4,764			352						
1994					1,535										
Female harvest (number of fish) by brood year															
1977														209	
1978														----	
1979										4,592	----		----	----	
1980						33,395	----		6,053	----	----	----	----	28	
1981		209	----		7,514	----	----		----	----	28	----	28		
1982			----		----	----		----	----	1,854					
1983	----	----		----	----	1,544	----		1,011	870				15	
1984	----			----	674	2,734	5	28	280	320			4	----	
1985		31			1,740	1,789	4		501	279	----		----		
1986	31	28			567	494	----		142	----		----			
1987				----	112	----			----	713					
1988			----		----	471		----	208	220			12		
1989	----			----	367	1,053	22		968	67					
1990	7				1,103	6,403			67						
1991					3,917					187				32	
1992						1,986			150	496					
1993					987	4,092			719						
1994				12	3,837										

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Year	Age Group																											
	0.2	n	0.3	n	0.4	n	1.1	n	1.2	n	1.3	n	1.4	n	2.1	n	2.2	n	2.3	n	2.4	n	3.1	n	3.2	n	3.3	n
Male age composition by harvest year																												
1977			0.65	2					1.29	4	18.06	56					1.61	5	19.03	59	0.32	1			0.65	2		
1983	0.38	1	1.13	3					13.21	35	19.25	51					8.68	23	1.13	3								
1984									29.90	154	11.46	59	0.39	2			1.55	8	3.69	19								
1985									4.10	18	32.80	144					3.19	14	2.96	13							0.23	1
1986	----		----		----		----		----		----		----		----		----		----		----		----		----			
1987	----		----		----		----		----		----		----		----		----		----		----		----		----			
1988									3.06	10	12.23	40					6.12	20	21.71	71							0.30	1
1989	0.30	1	0.30	1					13.60	45	25.09	83					0.90	3	4.53	15								
1990			0.24	3					7.12	65	24.46	229					7.91	76	4.22	43								
1991									3.16	15	20.19	96					4.62	22	12.18	58					0.23	1	0.39	2
1992	----		----		----		----		----		----		----		----		----		----		----		----		----			
1993																												
1994									11.98	58	17.78	86		0.40	2		9.92	48	3.31	16								
1995									14.68	116	25.58	202					0.12	1	0.12	1								
1996									24.94 ^a	94	19.01 ^a	71																
1997									10.00 ^c	66	31.60 ^c	210					2.00 ^c	13	2.90 ^c	19								
1998									9.60 ^a	47	29.80 ^a	146					2.20 ^a	11	1.00 ^a	5								
Female age composition by harvest year																												
1977			0.65	2			0.32	1	2.58	8	29.67	92	0.32	579			1.29	4	22.90	71	0.32	1			0.32	1		
1983			1.13	3					18.12	48	26.41	70	0.38	1	0.38	1	8.68	23	1.13	3					0.32	1		
1984			0.19	1					30.88	159	15.92	82	0.39	2			3.30	17	1.94	10	0.39	2						
1985			0.23	1					8.20	36	36.45	160					6.61	29	5.01	22							0.23	1
1986	----		----		----		----		----		----		----		----		----		----		----		----		----			
1987	----		----		----		----		----		----		----		----		----		----		----		----		----			
1988									7.34	24	16.82	55		0.30	1		11.01	36	20.19	66	0.30	1			0.30	1	0.30	1
1989	0.30	1	0.30	1					16.91	56	26.60	88					2.71	9	8.46	28								
1990			0.49	6					9.90	93	31.23	296	0.09	1			8.75	87	5.59	56								
1991									6.32	30	27.86	133	0.23	1			8.01	38	15.74	75					0.23	1	0.85	4
1992	----		----		----		----		----		----		----		----		----		----		----		----		----			
1993																												
1994									18.61	90	17.76	86					16.33	79	3.71	18					0.20	1		
1995									22.28	176	36.33	287	0.12	1			0.38	3	0.38	3								
1996									35.06 ^a	131	20.99 ^a	79																
1997							0.20 ^c	1	15.80 ^c	105	31.80 ^c	211		0.30 ^c	2		2.40 ^c	16	3.00 ^c	20								
1998									24.00 ^a	118	25.6 ^a	126					4.50 ^a	22	3.70 ^a	15							0.20 ^a	1
Both Sexes																												
1977			1.30	4			0.32	1	3.87	12	47.73	148	0.32	579			2.90	9	41.93	130	0.64	2			0.97	3		
1983	0.38	1	2.26	6					31.33	83	45.66	121	0.38	1	0.38	1	17.36	46	2.26	6								
1984			0.19	1					60.78	313	27.38	141	0.78	4			4.85	25	5.63	29	0.39	2						
1985			0.23	1					12.30	54	69.25	304					9.80	43	7.97	35							0.46	2
1986	----		----		----		----		----		----		----		----		----		----		----		----		----			
1987	----		----		----		----		----		----		----		----		----		----		----		----		----			
1988									10.40	34	29.05	95		0.30	1		17.13	56	41.90	137	0.30	1			0.30	1	0.60	2
1989	0.60	2	0.60	2					30.51	101	51.69	171					3.61	12	12.99	43								
1990			0.73	9					17.02	158	55.69	525	0.09	1			16.66	163	9.81	99								
1991									9.48	45	48.05	229	0.23	1			12.63	60	27.92	133					0.46	2	1.24	6
1992	----		----		----		----		----		----		----		----		----		----		----		----		----			
1993																												
1994									30.59	148	35.54	172		0.40	2		26.25	127	7.02	34					0.20	1		
1995									36.96	292	61.91	489	0.12	1			0.50	4	0.50	4								
1996									60.00 ^a	225	40.00 ^a	150																
1997							0.20 ^c	1	25.80 ^c	171	63.40 ^c	421		0.30 ^c	2		4.40 ^c	29	5.90 ^c	39								
1998									33.60 ^a	165	55.40 ^a	272					6.70 ^a	33	4.10 ^a	20							0.20 ^a	1

Appendix C. Aialik Bay: age, mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

										Age Group																					
Year	0.2	SE	n	0.3	SE	n	0.4	SE	n	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n	
Male mean length (mm) by brood year																															
1978																581	4.90	22													
1979													502	3.56	89	581	2.43	93	648	NA	1					534	7.28	4	586	12.59	6
1980										355	25.00	2	515	2.78	116	569	2.71	85								529	7.06	8	582	6.34	20
1981										400	NA	1	500	9.98	17	566			-----				380	NA	1	498			-----		
1982							-----						496			-----									-----				581	5.00	33
1983				-----									-----			581	4.00	73				-----			512	10.0	9	607	5.00	39	
1984	-----						561	NA	1	-----			517	3.00	58	590	2.00	214	610	4.00	2				539	5.00	19	610	9.00	12	
1985													521	3.00	65	613	4.00	50							545	2.00	126	571	3.00	103	
1986				659	NA	1				367	4.00	2	541	5.00	73	566	4.00	38							498	7.00	22				
1987	478	NA	1										496	8.00	29																
1988																															
1989																												611	NA	1	
1990																568	2.00	110							534	NA	1				
1991													513	3.00	64																
1992										337	NA	1				570	7.00	36	-----						508	2.00	2	-----			
1993							-----						501	4.00	21	-----									-----						
1994				-----									-----										-----								
Female mean length (mm) by brood year																															
1978																557	2.85	43	546	10.82	5				530	na	1	565	6.25	3	
1979													499	2.27	119	557	2.22	100							512	7.75	4	548	5.25	24	
1980													493	2.23	117	551	1.76	103							493	4.11	19	547			
1981				539	NA	1							497	4.59	17	544			-----						501			-----			
1982							-----						496			-----									-----			564	3.00	53	
1983				-----									-----			555	2.00	110				-----			506	9.00	17	579	6.00	21	
1984	-----			516	NA	1				-----			502	2.00	110	563	1.00	274	632	NA	1				526	4.00	27	594	6.00	6	
1985													506	3.00	70	579	4.00	56							520	2.00	137	547	2.00	149	
1986													529	3.00	66	544	3.00	68							501	4.00	37				
1987													496	5.00	29																
1988																															
1989																			542	NA	1						518	NA	1		
1990																548	1.00	191							496	15.0	5				
1991													497	1.00	154																
1992										515	NA	1				561	2.00	60	-----						460	NA	1	-----			
1993							-----						487	6.00	19	-----							416	NA	1	-----					
1994				-----									-----										-----								

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Appendix C cont'd (Aialik Bay: page 2 of 4).												Age Group																			
Year	0.2	SE	n	0.3	SE	n	0.4	SE	n	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n	
Male mean weight (kg) by brood year																															
1978																3.16	0.10	8							2.67	0.21	3	2.90	NA	1	
1979													0.06	38.00		3.34	0.07	38	4.80	NA	1				2.37	0.28	2	3.76	0.14	14	
1980													2.42	0.06	54	3.50	0.07	51							2.56	0.12	17	2.86			
1981													2.63	0.16	5	2.96			----				1.30	NA	1	2.11			----		
1982													2.10			----									----			3.76	0.17	4	
1983													----			3.37	0.35	9				----			1.55	NA	1	3.45	0.50	2	
1984	----												2.44	0.19	6	3.80	0.16	20							2.45	NA	1	3.10	NA	1	
1985													1.59	0.22	4	3.69	0.19	7							2.61	0.10	15	2.86	0.08	17	
1986													2.48	0.52	4	2.96	0.13	5							2.11	0.18	3				
1987										0.80			2.10	0.22	6																
1988																															
1989																															
1990																3.28	0.10	16	----												
1991													2.47	0.14	4	----			----							----					
1992													----			----			----							----					
1993	----												----			----			----							----					
1994	----												----			----			----							----					
Female mean weight (kg) by brood year																															
1978																2.94	0.09	14	2.85	NA	1				2.55	0.00	1	3.00	0.05	2	
1979													2.03	0.05	43	2.93	0.05	59							2.33	0.08	2	3.20	0.10	12	
1980													2.01	0.04	56	3.04	0.04	54							2.66	0.21	7				
1981				2.95	NA	1							2.28	0.08	9				----												
1982																----												3.40	0.13	3	
1983													----			2.91	0.31	7				----			2.20	0.50	2	2.95	NA	1	
1984	----												1.88	0.13	13	2.99	0.07	31							1.80	0.05	2	3.10	NA	1	
1985													1.97	0.14	9	3.10	0.21	3							2.02	0.08	18	2.37	0.05	25	
1986													1.85	0.04	6	2.42	0.09	11							1.96	0.14	5				
1987													1.76	0.08	5																
1988																															
1989																															
1990																2.52	0.07	22	----						1.81	NA	1	----			
1991													2.02	0.05	13	----			----							----					
1992													----			----			----							----					
1993	----												----			----			----							----					
1994	----												----			----			----							----					

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Appendix C. cont'd (Aialik Bay: page 3 of 4)

Year	Age Group														
	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3	
Male harvest (number of fish) by brood year															
1978															
1979															
1980															
1981															
1982										1,440					
1983						3,184			393	170					
1984			4		2,531	3,084	29		83	174					
1985					347	723			1,824	1,020					
1986		14		9	1,056	376			218	68					
1987	14				287	1,115				159					
1988					67	256			287						
1989					798					4					
1990						408			4						
1991					238										
1992				4		542			30						
1993					317										
1994															
1995															
Female harvest (number of fish) by brood year															
1978															
1979															
1980															
1981															
1982										2,312					
1983						4,799			742	92					
1984		44			4,800	4,262	14		118	87					
1985					369	810			1,982	1,476					
1986					955	673			366	67					
1987					287	1,115				160					
1988					68	255			287						
1989					798		4			4					
1990						709			19						
1991					573										
1992				4		906			1						
1993					287			15							
1994															
1995															

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Appendix C cont'd (Aialik Bay: page 4 of 4)

Year	Age Group																			
	0.2	n	0.3	n	0.4	n	1.1	n	1.2	n	1.3	n	1.4	n	2.1	n	2.2	n	2.3	n
Male age composition by harvest year																				
1983							0.71	2	31.79	89	7.86	22					1.43	4		
1984							0.22	1	25.61	116	20.53	93					1.77	8	1.32	6
1985									5.35	17	26.73	85	0.32	1	0.32	1	9.43	30	6.29	20
1986									7.55		9.90						5.70		26.85	
1987	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1988									12.50	58	15.73	73					1.94	9	7.11	33
1989					0.05	1	0.11	2	4.06	65	36.12	214					0.97	19	1.99	39
1990	0.18	1	0.18	1					13.75	73	9.41	50	0.38	2			23.74	126	2.27	12
1991									6.10	29	7.99	38					4.64	22	21.69	103
1992									NA		NA								2.72	
1993																				
1994																				
1995							0.20	1	12.08	64	20.70	110					0.20	1	0.20	1
1996	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1997									15.00	21	25.70	36					1.40	2		
1998	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
Female age composition by harvest year																				
1983									42.50	119	15.36	43					0.36	1		
1984									25.83	117	22.07	100	1.10	5			0.88	4	0.66	3
1985			0.32	1					5.35	17	32.39	103					5.97	19	7.55	24
1986									5		12						7		26	
1987	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1988			0.22	1					23.71	110	23.70	110					3.67	17	11.42	53
1989									4.32	70	49.92	274					1.38	27	1.08	21
1990									12.43	66	10.54	56	0.18	1			25.80	137	1.13	6
1991									6.10	29	14.31	68					7.78	37	31.38	149
1992									NA		NA								3	
1993																				
1994																				
1995							0.20	1	29.07	154	35.97	191	0.20	1			0.96	5	0.20	1
1996	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1997									13.60	19	42.90	60			0.70	1	0.07	1		
1998	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
Both sexes																				
1983							0.71	2	74.29	208	23.22	65					1.79	5		
1984							0.22	1	51.44	233	42.60	193	1.10	5			2.65	12	1.98	9
1985			0.32	1					10.70	34	59.12	188	0.32	1	0.32	1	15.40	49	13.84	44
1986																				
1987	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1988			0.22	1					36.21	168	39.43	183					5.61	26	18.53	86
1989																				
1990	0.18	1	0.18	1					26.18	139	19.95	106	0.56	3			49.54	263	3.40	18
1991									12.20	58	22.30	106					12.42	59	53.07	252
1992									5.40	2	89.20	33							5.40	2
1993	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1994									70.37	190	18.89	51					7.78	21	2.96	8
1995							0.40	2	41.15	218	56.67	301	0.20	1			1.16	6	0.40	2
1996	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1997									28.60	40	68.60	96			0.70	1	2.10	3		
1998	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	

Appendix D. Chenik: age, mean length and weight (+ Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates that no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

Year	Age Group																																
	0.2	SE	n	0.3	SE	n	0.4	SE	n	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n			
Male mean length (mm) by brood year																																	
1978																581	4	36															
1979													533	5	20	574	14	4															
1980													508	2	122	568	2	93															
1981													498	5	18	569	9	12							509	6	22						
1982													508	2	214				602	NA	1								585	NA	3		
1983																565	1	441								508	3	21	571	4	26		
1984													498	3	83	568	3	92					370	5	8	535	3	45	555	11	7		
1985													518	2	46	554	3	114							502	6	16	562	5	9			
1986				552	26	5							493	1	327	550	2	104							517	9	10						
1987	417	NA	1										505	2	142	547	3	80															
1988													501	2	85	553	1	262	550	NA	1				549	5	6						
1989													516	5	32	548	3	44					329	NA	1	509	NA	1	541	9	2		
1990													491	1	44	558	1	203															
1991													504	3	80														535	NA	1		
1992																559	2	124															
1993										436	NA	1	491	4	26																		
1994																																	
Female mean length (mm) by brood year																																	
1978																548	2.56	46															
1979													497	3	57	538	11	4	515	NA	1								537	24	3		
1980													486	2	91	542	2	118							467	20	3						
1981				547	1	2							485	5	17	530	3	6							489	3	16						
1982													486	2	132														561	16	5		
1983																536	1	520							490	3	48	543	5	16			
1984													484	2	111	542	2	69							505	3	47	523	14	4			
1985													494	3	62	534	2	125					324	NA	1	485	6	15	512	7	3		
1986				537	7	7							469	2	272	530	2	148							492	10	8	537	NA		1		
1987													481	2	94	512	3	55															
1988													487	3	70	532	1	203							496	NA	1						
1989													492	4	32	530	3	39							482	25	2	544	NA		1		
1990													476	3	52	537	1	181							470	NA	1						
1991													478	3	57														572	NA		1	
1992																531	2	126															
1993													476	3	34																		
1994																																	

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Appendix D. cont'd (Chenik: page 2 of 4).

Age Group																															
Year	0.2	SE	n	0.3	SE	n	0.4	SE	n	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n	
Male mean weight (kg) by brood year																															
1978																2.64	0.05	36													
1979													2.05	0.06	20	2.58	0.03	2													
1980													1.76	0.03	56	2.81	0.07	27													
1981													2.08	0.06	8	2.20	0.28	4	----					1.75	0.09	12.00	----				
1982							----						1.64	0.03	81	----									----						
1983				----									----			2.60	0.06	49					----		1.98	NA	2.00	2.30	NA	1.00	
1984	----												1.71	0.12	13	2.50	0.13	9					0.90	NA	1.00	2.18	0.09	4.00			
1985													2.05	NA	1	2.37	0.14	3										1.99	0.06	3.00	
1986													1.82	0.06	25	1.71	0.05	21						1.59	0.03	3.00					
1987													1.40	0.04	26	2.10	0.10	16													
1988													1.60	0.07	17	2.11	0.06	24										2.20	NA	1.00	
1989													1.37	0.20	3	2.19	0.05	44						1.70	NA	1.00	2.05	0.25	2.00		
1990													1.56	0.02	144	2.25	0.02	203													
1991													1.65	0.03	80													2.30	NA	1	
1992																2.40	0.03	124	----												
1993							----				2.0	NA	1	1.59	0.05	26	----								----						
1994				----									----																		
Female mean weight (kg) by brood year																															
1978																2.05	0.04	46													
1979													1.52	0.03	57	2.02	0.06	3										3.60	NA	1.00	
1980													1.39	0.03	55	2.44	0.06	27													
1981				3.00	NA	1.00							1.88	0.09	3	1.83	0.09	3	----					1.46	0.07	9.00	----				
1982							----						1.39	0.03	37	----															
1983				----									----			2.01	0.05	44					----		1.55	NA	2.00	1.90	NA	1.00	
1984	----												1.54	0.06	15	2.03	0.12	6							1.75	0.11	4.00				
1985													1.53	0.09	4	2.10	NA	1							1.30	NA	1.00				
1986													1.52	0.04	16	1.50	0.03	24						1.38	NA	1.00	1.89	NA	1.00		
1987													1.10	0.04	14	1.55	0.11	9													
1988													1.48	0.09	12	1.78	0.05	25													
1989													1.40	NA	1	1.81	0.05	39						1.35	0.05	2.00	1.80	NA	1.00		
1990													1.31	0.03	52	1.77	0.02	181						1.10	NA	1.00					
1991													1.29	0.03	57													2.25	NA	1	
1992																1.93	0.03	126	----												
1993							----						1.32	0.04	34	----															
1994				----									----																		

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Appendix D. cont'd (Chenik: page 3 of 4). Zeros indicate that there were no commercial harvests.

Year	Age Group													
	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3
	Male harvest (number of fish) by brood year													
1979														
1980						3,875					----			----
1981					750	3,322	----		6,091	----			----	
1982				----	59,250	----	187		----	414		----		
1983		----			----	63,150		----	2,951	2,504				
1984	----			----	9,843	8,860		1,079	4,333	588				
1985					4,430	9,577			1,120	900				
1986		451			24,897	10,395								
1987	90				14,192	3,953								
1988					4,199	11,986			274					
1989					1,464			46						
1990														
1991											0			0
1992							0			0			0	
1993			0	1		0			0			0		
1994		0			0			0						
	Female harvest (number of fish) by brood year													
1979							42			125				
1980						4,916			125		----			----
1981		83			708	1,661	----		4,430	----			----	
1982				----	36,546	----			----	904		----		
1983		----			----	65,687		----	6,063	1,541				
1984	----			----	13,882	6,644			4,526	361				
1985					5,971	10,870		96	1,159	300				
1986		632			20,602	14,792			800	49				
1987					9,395	2,717								
1988					3,460	9,287			46					
1989					1,464									
1990														
1991											0			0
1992							0			0			0	
1993			0			0			0			0		
1994		0			0			0						

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Age Group																				
Year	0.2	n	0.3	n	0.4	n	1.1	n	1.2	n	1.3	n	1.4	n	2.1	n	2.2	n	2.3	n
Male age composition by harvest year																				
1983									12.57	20	22.64	36								
1984									55.20	122	1.81	4								
1985									7.06	18	36.47	93								
1986									53.23	214	2.98	12					5.47	22		
1987	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1988									6.00	83	38.47	441	0.11	1	0.66	8	1.80	21	0.25	3
1989									11.39	46	22.77	92					11.14	45	6.44	26
1990	0.13	1	0.64	5					35.39	327	13.61	114					1.59	16	0.84	7
1991									27.41	142	20.08	104					1.93	10	1.74	9
1992									29.20	85	27.49	80								
1993									5.96	32	48.79	262			0.19	1	1.12	6		
1994									50.74	144	15.59	44	0.37	1			0.37	1		
1995									15.19	80	38.77	203							0.37	2
1996							0.16	1	31.80	179	16.61	94					0.16	1		
1997									8.30	26	39.80	124							0.30	1
1998	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
Female age composition by harvest year																				
1983									35.86	57	28.93	46								
1984									41.18	91	1.81	4								
1985			0.78	2					6.66	17	46.27	118	0.40	1			1.18	3	1.18	3
1986									32.84	132	1.49	6					3.98	16		
1987	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1988									8.46	111	40.01	520					3.69	48	0.55	5
1989									15.35	62	17.08	69			0.25	1	11.63	47	3.96	16
1990			0.90	7					29.29	272	15.45	125					1.65	15	0.51	4
1991									18.15	94	28.57	148					1.55	8	0.58	3
1992									24.06	70	18.90	55							0.34	1
1993									5.96	32	37.80	203					0.19	1		
1994									18.44	52	13.74	39					0.74	2		
1995									10.87	57	34.44	181					0.18	1	0.18	1
1996									33.70	190	17.41	98					0.16	1		
1997									10.90	34	40.40	126							0.30	1
1998	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
Both Sexes																				
1983									48.43	77	51.57	82								
1984									96.38	213	3.62	8								
1985			0.78	2					13.72	35	82.74	211	0.40	1			1.18	3	1.18	3
1986									86.07	346	4.47	18					9.45	38		
1987	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
1988									14.46	194	78.48	961	0.11	1	0.66	8	5.49	69	0.80	8
1989									26.74	108	39.85	161			0.25	1	22.77	92	10.40	42
1990	0.13	1	1.54	12					64.68	599	29.06	239					3.24	31	1.35	11
1991									45.56	236	48.65	252					3.48	18	2.32	12
1992									53.26	155	46.39	135							0.34	1
1993									11.92	64	86.59	465			0.19	1	1.31	7		
1994									69.18	196	29.33	83	0.37	1			1.11	3		
1995									26.06	137	73.21	384					0.18	1	0.55	3
1996							0.16	1	65.51	369	34.02	192					0.32	2		
1997									19.20	60	80.20	250					0.60	2		
1998	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	

Appendix E. Mikfik: age, and mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data. *Indicates samples were collected by snagging.

Age Group																																								
Year	0.3	SE	n	0.4	SE	n	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n	2.4	SE	n	3.1	SE	n	3.2	SE	n	3.3	SE	n	
Male mean length (mm) by brood year																																								
1969																																								
1970													545*	NA	1								503*	NA	1															
1971										503*	15.5	5	416	NA	1								469	NA	1															
1972										454	23.9	3																												
1973																																								
1974																																								
1975										503			527	5.0	12								545	NA	1															
1976										484	11.0	15														517	12.0	7												
1977													519	5.0	23																									
1978										499	8.0	5																												
1979																																								
1980																505	1.0	2							520	14.0	3	----										528	NA	1.0
1981													520	2.0	117	----							448	7.0	13	----														
1982				----						457	6.0	43	----										----			515	12.0	6												
1983	----									----			512	1.0	190							----			479	8.0	17	535	5.0	23										
1984							----			462	2.0	130	533	1.0	215										493	6.0	28	510	4.0	35										
1985										475	8.0	26	504	3.0	88										471	8.0	14	501	8.0	5										
1986										441	3.0	98	500	2.0	160										456	3.0	39	491	3.0	34										
1987										464	4.0	35	506	1.0	233										446	12.0	5	516	4.0	19										
1988										443	3.0	19	516	1.0	102										471	6.0	13													
1989										457	2.0	96															501	7.0	4											
1990							316	NA	2				515	5.0	32									443	18.0	2														
1991										433	6.0	18																												
1992							332	NA	1				523	2.0	72	----								474	7	9	----													
1993	553	NA	1	----						486	8.0	19	----																											
1994	----									----																														
Female mean length (mm) by brood year																																								
1969																																								
1970													522*	NA	1																									
1971										439*	NA	1	497	9.24	4										463	8.21	3													
1972										462	5.7	10																												
1973																																								
1974																																								
1975													503	6.97	23										448	2.5	2													
1976										469	10.5	15															522	4.26	9											
1977													513	3.91	37																									
1978										483	16.7	10																												
1979																																								
1980																																								
1981													512	3.0	63	----									462	4.0	15	----										460	NA	1
1982	545	NA	1	----						458	5.0	33	----												----			517	NA	2										
1983	----									----			511	2.0	181											469	5.0	18	525	4.0	12									
1984							----			458	1.0	161	531	2.0	156											480	5.0	26	510	4.0	20									
1985										471	6.0	27	511	3.0	69											456	10.0	9	494	6.0	12									
1986										438	3.0	73	499	2.0	155											457	3.0	65	508	4.0	18									
1987										461	3.0	58	509	2.0	198											451	8.0	5	520	5.0	15									
1988										446	3.0	22	517	1.0	108											467	7.0	14												
1989										463	1.0	110																510	NA	1										
1990							310	5	8				502	3.0	30										459	17.0	3													
1991	510	NA	1							444	5.0	27																501	NA	1	----									
1992													522	3.0	46	----										457	10.0	9	----											
1993										469	8.0	22	----																											
1994	----									----																														

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Age Group																																							
Year	0.3	SE	n	0.4	SE	n	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n	2.4	SE	n	3.1	SE	n	3.2	SE	n	3.3	SE	n
Male mean weight (kg) by brood year																																							
1969																																							
1970																																							
1971																																							
1972																																							
1973																																							
1974																																							
1975																																							
1976																																							
1977																																							
1978																																							
1979																																							
1980																1.55	NA	1.00									1.75	0.10	2.00	----							----		
1981														1.76	0.03	48.00	----									1.20	NA	1.00	----							----			
1982				----							1.27	0.06	22.00	----												----			2.50	NA	1.00								
1983	----													2.21	0.04	41.00											1.53	0.08	4.00	1.87	0.09	3.00							
1984														1.66	0.08	17.00											1.37	0.23	2.00	1.80	NA	1.00							
1985														0.90	NA	1.00	1.91	0.09	9.00								1.25	0.15	2.00	1.64	0.11	2.00							
1986														1.45	0.07	8.00	1.73	0.04	30.00								1.21	0.14	3.00	1.65	0.06	3.00							
1987														1.51	0.07	7.00	1.72	0.06	20.00											1.99	NA	1.00							
1988														1.19	0.05	2.00	1.70	0.08	9.00																				
1989														1.24	0.07	10.00																							
1990																1.93	0.09	32.00									1.27	0.18	2.00										
1991														1.17	0.07	18.00	----																						
1992				----					0.52	NA	1.00			----																									
1993	----			----										----																									
1994	----																																						
Female mean weight (kg) by brood year																																							
1969																																							
1970																																							
1971																																							
1972																																							
1973																																							
1974																																							
1975																																							
1976																																							
1977																																							
1978																																							
1979																																							
1980																																							
1981																1.62	0.06	22.00	----									1.13	0.05	5.00	----								
1982	2.00	NA	1.00	----							1.06	0.06	16.00	----																									
1983	----															2.16	0.08	26.00										1.56	0.06	4.00									
1984																1.51	0.04	21.00										1.58	0.08	2.00	1.95	0.25	2.00						
1985																1.33	0.33	2.00	1.96	0.06	8.00						1.70	NA	1.00	1.60	0.01	3.00							
1986																1.34	0.05	9.00	1.62	0.03	34.00							1.31	0.05	12.00	1.52	0.12	2.00						
1987																1.45	0.04	8.00	1.70	0.05	23.00										1.97	NA	1.00						
1988																0.99	0.04	2.00	1.59	0.05	12.00							1.02	0.04	2.00									
1989																1.21	0.05	18.00																					
1990																		1.64	0.03	30.00								1.29	0.09	3.00									
1991	1.71	NA	1.00													1.21	0.05	27.00																					
1992				----																																			
1993	----																																						
1994	----																																						

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Year	Age Group													
	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3
Male harvest (number of fish) by brood year														
1976										1,386				
1977						4,552								
1978					990									
1979														93
1980							186			279	0		0	
1981						10,869	0		1,208	0		0		
1982			0		3,995	0			0	131				
1983		0			0	3,892		0	352	314				
1984	0			0	2,676	2,933			382	782				
1985					355	1,965			313	122				
1986					2,188	3,897			950	252				
1987					853	1,730			37	37				
1988					141	197			25					
1989					185					5	0			0
1990				4		36	0		2	0			0	
1991			0		21	0			0			0		
1992		0		1	0			0						
1993	0			0	22									
1994						1,224			288					
Female harvest (number of fish) by brood year														
1976										1,782				
1977						7,324								
1978					1,979									
1979														0
1980										372	0		93	
1981						5,852	0		1,394	0		0		
1982		93	0		3,066	0			0	42				
1983		0			0	3,746		0	381	164				
1984	0			0	3,420	2,129			355	447				
1985					368	1,541			201	292				
1986					1,629	3,776			1,583	134				
1987					1,413	1,469			37	29				
1988					163	209			27					
1989					213					1	0			0
1990				15		35	0		3	0			0	
1991		1	0		31	0			0			0		
1992		0			0			0						
1993	0			0	26	1,296			792					
1994														

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Year	Age Group															
	0.3	n	0.4	n	1.1	n	1.2	n	1.3	n	1.4	n	2.1	n	2.2	n
Male age composition by harvest year																
1975							55.56	5	11.11	1			11.11	1		
1976							13.63	3	4.55	1			4.55	1		
1977																
1978																
1979																
1980							22.10	15	17.60	12			1.50	1		
1981																
1982							5.50	5	25.27	23					7.69	7
1983																
1984																
1985																
1986							14.53	43	39.52	117	0.68	2	4.39	13	1.01	3
1987																0.34
1988							18.28	130	26.58	190			2.40	17	0.89	6
1989							5.07	26	41.90	215			5.46	28	4.49	23
1990							24.13	98	21.67	88			3.45	14	8.63	35
1991							6.62	35	30.24	160			7.37	39	0.95	5
1992							3.56	19	43.65	233			0.93	5	6.36	34
1993				0.43	2		19.66	96	20.94	102			2.66	13	3.93	19
1994																
1995																
1996																
1997	0.06	1					10.6	19	40.20	72			5.00	9		
1998																
Female age composition by harvest year																
1975							11.11	1	11.11	1						
1976							45.45	10	18.18	4			13.64	3		
1977																
1978																
1979																
1980							22.10	15	33.80	23			2.90	2		
1981																
1982							10.99	10	40.66	37					9.89	9
1983																
1984																
1985																
1986	0.34	1					11.15	33	21.28	63			5.07	15	1.35	4
1987																0.34
1988							23.36	161	25.59	181			2.60	18	0.29	2
1989							5.26	27	30.41	156			5.07	26	2.34	12
1990							17.97	73	17.00	69			2.22	9	4.93	20
1991							10.97	58	29.30	155			12.28	65	2.27	12
1992							4.11	22	37.07	198			0.93	5	3.38	18
1993				1.59	8		22.64	110	22.21	108			2.87	14	3.08	15
1994																
1995																
1996																
1997							12.3	22	25.7	46			5.0	9	0.60	1
1998																
Both Sexes																
1975							66.67	6	22.22	2			11.11	1		
1976							59.08	13	22.73	5			18.19	4		
1977																
1978																
1979																
1980							44.20	30	51.40	35			4.40	3		
1981																
1982							16.49	15	65.93	60					17.58	16
1983																
1984																
1985																
1986							25.68	76	60.80	180	0.68	2	9.46	28	2.36	7
1987																0.34
1988							41.64	291	52.17	371			5.00	35	1.18	8
1989							10.33	53	72.31	371			10.53	54	6.83	35
1990							42.10	171	38.67	157			5.67	23	13.56	55
1991							17.59	93	59.54	315			19.65	104	3.22	17
1992							7.67	41	80.72	431			1.86	10	9.74	52
1993				2.02	10		42.30	206	43.15	210			5.53	27	7.01	34
1994																
1995																
1996																
1997	0.60	1					22.9	41	65.9	118			10.0	18	0.60	1
1998																

Appendix F. Inventory of Archived Lower Cook Inlet Adult Salmon Scales

Year	District	Location	Specie	Sample Type	# of cards	Card Location	Electronic File Location	Hardcopy File Location	Comments
1968	Southern	English Bay	Sockeye	Escapement	2	Archive cabinet		Archive cabinet	
1969	Eastern	Ress. Bay	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1970	Southern	McDonald Spit	Sockeye	Set net	2	Archive cabinet		Archive cabinet	
1972	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1973	Southern	Homer Dock	Sockeye	Set net	4	Archive cabinet		Archive cabinet	south bay set net
1974	Outer	Port Dick	Chum	Comm Catch	4	Archive cabinet		Archive cabinet	
1974	Outer	Island Cr	Chum	Comm Catch	1	Archive cabinet		Archive cabinet	
1974	Southern	Kasitsna	Sockeye	Set net	2	Archive cabinet		Archive cabinet	
1975	Kamishak	Mikfik Lake	Sockeye	Comm Catch	1	Archive cabinet		Archive cabinet	
1975	Southern	Homer	Sockeye	Set net	3	Archive cabinet		Archive cabinet	set net sites?
1975	Kamishak	Mikfik Lake	Sockeye	Comm Catch	2	Archive cabinet		Archive cabinet	
1976	Kamishak	Cottonwood	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1976	Kamishak	Ursus	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1976	Southern	English Bay	Sockeye	?	1	Archive cabinet		Archive cabinet	
1977	Kamishak	McNeil River	Chum	Comm Catch	4	Archive cabinet		Archive cabinet	
1977	Outer	Delight Lake	Sockeye	Escapement	2	Archive cabinet		Archive cabinet	
1977	Outer	Desire Lake	Sockeye	Escapement	10	Archive cabinet		Archive cabinet	
1978	Southern	Tutka	Sockeye	Comm Catch	8	Archive cabinet		Archive cabinet	
1980	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1982	Kamishak	McNeil River	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1982	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1982	Kamishak	Silver Beach	Chum	Comm Catch	3	Archive cabinet		Archive cabinet	
1983	Eastern	Aialik	Sockeye	Comm Catch	8	Archive cabinet		Archive cabinet	
1983	Kamishak	Chenik Lake	Sockeye	Comm Catch	5	Archive cabinet		Archive cabinet	
1983	Southern	China Poot	Sockeye	Comm Catch	19	Archive cabinet		Archive cabinet	
1983	Outer	Delight Lake	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1983	Outer	Desire Lake	Sockeye	Comm Catch	2	Archive cabinet		Archive cabinet	
1983	Southern	English Bay	Sockeye	Comm Catch	9	Archive cabinet		Archive cabinet	
1983	Kamishak	Iniskin	Chum	Comm Catch	9	Archive cabinet		Archive cabinet	
1983	Kamishak	Kamishak River	Chum	Comm Catch	7	Archive cabinet		Archive cabinet	
1983	Kamishak	McNeil River	Chum	Comm Catch	32	Archive cabinet		Archive cabinet	
1983	Outer	Nuka Bay	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1983	Eastern	Tonsina Cr	Chum	Comm Catch	3	Archive cabinet		Archive cabinet	
1983	Southern	Tutka	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	

Appendix F. Inventory of Archived Lower Cook Inlet Adult Salmon Scales

Year	District	Location	Specie	Sample Type	# of cards	Card Location	Electronic File Location	Hardcopy File Location	Comments
1983	Kamishak	Silver Beach	Sockeye	Comm Catch	1	Archive cabinet		Archive cabinet	
1983	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1984	Eastern	Aialik	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1984	Eastern	Aialik	Chum	Comm Catch	1	Archive cabinet		Archive cabinet	
1984	Kamishak	Chenik Lake	Sockeye	Comm Catch	6	Archive cabinet		Archive cabinet	
1984	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1984	Kamishak	Iniskin	Chum	Comm Catch	10	Archive cabinet		Archive cabinet	
1984	Southern	Kasitsna	Sockeye	Set net	10	Archive cabinet		Archive cabinet	
1984	Kamishak	Kamishak River	Chum	Comm Catch	9	Archive cabinet		Archive cabinet	
1984	Kamishak	McNeil River	Chum	Comm Catch	3	Archive cabinet		Archive cabinet	
1984	Outer	Nuka Bay	Sockeye	Comm Catch	16	Archive cabinet		Archive cabinet	
1984	Eastern	Resse Bay	Chum	Comm Catch	1	Archive cabinet		Archive cabinet	
1984	Southern	Seldovia Bay	Sockeye	Set net	2	Archive cabinet		Archive cabinet	
1984	Eastern	Resse Bay	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1984	Outer	Rocky Bay	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1984	Kamishak	Ursus	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1985	Eastern	Aialik	Sockeye	Comm Catch	9	Archive cabinet		Archive cabinet	
1985	Kamishak	Chenik Lake	Sockeye	Escapement	8	Archive cabinet		Archive cabinet	
1985	Southern	China Poot	Sockeye	Comm Catch	9	Archive cabinet		Archive cabinet	
1985	Outer	Desire Lk	Sockeye	Comm Catch	13	Archive cabinet		Archive cabinet	
1985	Southern	Kasitsna	Sockeye	Set net	3	Archive cabinet		Archive cabinet	
1985	Kamishak	Mikfik Lake	Sockeye	Comm Catch	1	Archive cabinet		Archive cabinet	
1985	Outer	Nuka Bay	Sockeye	Comm Catch	5	Archive cabinet		Archive cabinet	no acetate impressions
1985	Eastern	Tonsina Cr	Chum	Comm Catch	5	Archive cabinet		Archive cabinet	
1986	Kamishak	Chenik Lake	Sockeye	Escapement	11	Archive cabinet		Archive cabinet	scales missing
1986	Southern	China Poot	Sockeye	Comm Catch	1	Archive cabinet		Archive cabinet	
1986	Kamishak	McNeil River	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	scales missing
1986	Southern	Kasitsna	Sockeye	Set net	6	Archive cabinet		Archive cabinet	
1986	Kamishak	Mikfik Lake	Sockeye	Comm Catch	8	Archive cabinet		Archive cabinet	2 acetates missing
1988	Eastern	Aialik	Sockeye	Comm Catch	14	Archive cabinet		Archive cabinet	
1988	Kamishak	Chenik Lake	Sockeye	Escapement	36	Archive cabinet		Archive cabinet	
1988	Southern	China Poot	Sockeye	Comm Catch	30	Archive cabinet		Archive cabinet	

Appendix F. Inventory of Archived Lower Cook Inlet Adult Salmon Scales

Year	District	Location	Specie	Sample Type	# of cards	Card Location	Electronic File Location	Hardcopy File Location	Comments
1988	Kamishak	Cottonwood	Chum	Comm Catch	12	Archive cabinet		Archive cabinet	
1988	Kamishak	Iniskin	Chum	Comm Catch	1	Archive cabinet		Archive cabinet	
1988	Kamishak	McNeil River	Chum	Comm Catch	27	Archive cabinet		Archive cabinet	
1988	Outer	Nuka Bay	Sockeye	Comm Catch	10	Archive cabinet		Archive cabinet	
1988	Kamishak	Mikfik Lake	Sockeye	Comm Catch	20	Archive cabinet		Archive cabinet	
1988	Outer	Port Dick	Chum	Comm Catch	25	Archive cabinet		Archive cabinet	
1988	Kamishak	Silver Beach	Chum	Comm Catch	13	Archive cabinet		Archive cabinet	
1988	Eastern	Tonsina Cr	Chum	Comm Catch	21	Archive cabinet		Archive cabinet	
1989	Eastern	Aialik	Sockeye	Comm Catch	23	Archive cabinet		Archive cabinet	
1989	Kamishak	Chenik Lake	Sockeye	Escapement	12	Archive cabinet		Archive cabinet	
1989	Southern	China Poot	Sockeye	Comm Catch	30	Archive cabinet		Archive cabinet	
1989	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1989	Outer	Nuka Bay	Sockeye	Comm Catch	11	Archive cabinet		Archive cabinet	
1990	Eastern	Aialik	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1990	Kamishak	Chenik Lake	Sockeye	Escapement	13	Archive cabinet		Archive cabinet	
1990	Kamishak	Chenik Lake	Sockeye	Escapement	12	Archive cabinet		Archive cabinet	
1990	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1990	Kamishak	Mikfik Lake	Sockeye	Comm Catch	12	Archive cabinet		Archive cabinet	
1990	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	7/5/1990
1990	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	7/11/1990
1991	Eastern	Aialik	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1991	Kamishak	Bruin Bay	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1991	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet		Archive cabinet	
1991	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet		Archive cabinet	
1991	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	7/13/1991
1991	Southern	China Poot	Sockeye	Comm Catch	10	Archive cabinet		Archive cabinet	7/18/1991
1991	Kamishak	Douglas River	Sockeye	Comm Catch	6	Archive cabinet		Archive cabinet	
1991	Kamishak	Kamishak River	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	
1991	Kamishak	Kirschner Lk	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1991	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1991	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1991	Outer	Port Dick	Chum	Comm Catch	2	Archive cabinet		Archive cabinet	

Appendix F. Inventory of Archived Lower Cook Inlet Adult Salmon Scales

Year	District	Location	Specie	Sample Type	# of cards	Card Location	Electronic File Location	Hardcopy File Location	Comments
1991	Outer	Port Dick	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1992	Kamishak	Bruin Bay	Chum	Comm Catch	4	Archive cabinet		Archive cabinet	
1992	Kamishak	Chenik Lake	Sockeye	Escapement	27	Archive cabinet		Archive cabinet	
1992	Kamishak	Chenik Lake	Sockeye	Ecapement	8	Archive cabinet		Archive cabinet	
1992	Southern	China Poot	Sockeye	Comm Catch	8	Archive cabinet		Archive cabinet	
1992	Kamishak	Cottonwood	Chum	Comm Catch	9	Archive cabinet		Archive cabinet	
1992	Outer	Delight Lake	Sockeye	Comm Catch	1	Archive cabinet		Archive cabinet	
1992	Southern	English Bay	Sockeye	Escapement	41	Archive cabinet		Archive cabinet	
1992	Kamishak	Kirchsner Lk	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1992	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1992	Kamishak	McNeil River	Chum	Comm Catch	15	Archive cabinet		Archive cabinet	
1992	Kamishak	Silver Beach	Chum	Comm Catch	7	Archive cabinet		Archive cabinet	7/7/1992
1992	Kamishak	Silver Beach	Chum	Comm Catch	7	Archive cabinet		Archive cabinet	7/31/1992
1992	Kamishak	Silver Beach	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1993	Kamishak	Chenik Lake	Sockeye	Escapement	24	Archive cabinet		Archive cabinet	6/25/1993
1993	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet		Archive cabinet	7/1/1993
1993	Southern	China Poot	Sockeye	Comm Catch	8	Archive cabinet		Archive cabinet	
1993	Southern	English Bay	Sockeye	Escapement	44	Archive cabinet		Archive cabinet	
1993	Kamishak	Kirchsner Lk	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1993	Southern	Neptune Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1993	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1993	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1993	Kamishak	Silver Beach	Sockeye	Comm Catch	6	Archive cabinet		Archive cabinet	
1994	Kamishak	Chenik Lake	Sockeye	Escapement	11	Archive cabinet		Archive cabinet	
1994	Southern	China Poot	Sockeye	Comm Catch	11	Archive cabinet		Archive cabinet	
1994	Southern	English Bay	Sockeye	Escapement	1	Archive cabinet		Archive cabinet	
1994	Southern	Hazel Lake	Sockeye	Escapement	1	Archive cabinet		Archive cabinet	4 fish sample
1994	Kamishak	Kirchsner Lk	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1994	Kamishak	McNeil River	Chum	Test Fish	2	Archive cabinet		Archive cabinet	Fish taken in Lagoon
1994	Southern	Neptune Bay	Sockeye	Comm Catch	5	Archive cabinet		Archive cabinet	
1994	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1994	Outer	Nuka Bay	Sockeye	Escapement	3	Archive cabinet		Archive cabinet	Delight Lake

Appendix F. Inventory of Archived Lower Cook Inlet Adult Salmon Scales

Year	District	Location	Specie	Sample Type	# of cards	Card Location	Electronic File Location	Hardcopy File Location	Comments
1994	Outer	Nuka Bay	Sockeye	Escapement	3	Archive cabinet		Archive cabinet	Desire Lake
1994	Outer	Nuka Bay	Sockeye	Escapement	2	Archive cabinet		Archive cabinet	Delusion Lake
1994	Eastern	Ress. Bay	Sockeye	Comm Catch	13	Archive cabinet		Archive cabinet	
1994	Kamishak	Silver Beach	Sockeye	Comm Catch	11	Archive cabinet		Archive cabinet	
1995	Eastern	Atalik	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1995	Kamishak	Chenik Lake	Sockeye	Escapement	18	Archive cabinet		Archive cabinet	
1995	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	7/28/1995
1995	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	8/2/1995
1995	Outer	Delight Lake	Sockeye	Escapement	3	Archive cabinet		Archive cabinet	
1995	Kamishak	Kirchsner Lk	Sockeye	Comm Catch	16	Archive cabinet		Archive cabinet	
1995	Kamishak	Mikik Lake	Sockeye	Comm Catch	4	Archive cabinet		Archive cabinet	
1995	Kamishak	McNeil River	Chum	Comm Catch	1	Archive cabinet		Archive cabinet	
1995	Southern	Neptune Bay	Sockeye	Comm Catch	18	Archive cabinet		Archive cabinet	
1995	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	6/27/1995
1995	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	6/30/1995
1995	Outer	Nuka Bay	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	7/11/1995
1995	Eastern	Ress. Bay	Sockeye	Comm Catch	10	Archive cabinet		Archive cabinet	
1995	Eastern	Ress. Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1996	Kamishak	Chenik Lake	Sockeye	Escapement	23	Archive cabinet		Archive cabinet	
1996	Southern	China Poot	Sockeye	Comm Catch	16	Archive cabinet		Archive cabinet	
1996	Kamishak	Kirchsner Lk	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1996	Kamishak	McNeil River	Chum	Comm Catch	6	Archive cabinet		Archive cabinet	
1996	Southern	English Bay	Sockeye	Escapement	15	Archive cabinet		Archive cabinet	Cost Recovery
1996	Southern	Neptune Bay	Sockeye	Comm Catch	11	Archive cabinet		Archive cabinet	
1996	Outer	Nuka Bay	Sockeye	Comm Catch	11	Archive cabinet		Archive cabinet	Delight Lk escapement
1996	Eastern	Ress. Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	6/4/1996
1996	Eastern	Ress. Bay	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1997	Eastern	Atalik	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	
1997	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet		Archive cabinet	
1997	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	7/8/1997
1997	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	7/11/1997
1997	Outer	Delight Lake	Sockeye	Escapement	19	Archive cabinet		Archive cabinet	SVOS project

Appendix F. Inventory of Archived Lower Cook Inlet Adult Salmon Scales

Year	District	Location	Specie	Sample Type	# of cards	Card Location	Electronic File Location	Hardcopy File Location	Comments
1997	Outer	Desire Lake	Sockeye	Escapement	21	Archive cabinet		Archive cabinet	EVOS project
1997	Kamishak	Mikfik Lake	Sockeye	Comm Catch	8	Archive cabinet		Archive cabinet	
1997	Southern	Neptune Bay	Sockeye	Comm Catch	13	Archive cabinet		Archive cabinet	
1997	Eastern	Ress Bay	Sockeye	Comm Catch	6	Archive cabinet		Archive cabinet	
1997	Kamishak	Silver Beach	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1998	Eastern	Bear Creek	Sockeye	Escapement	54	Archive cabinet		Archive cabinet	From CIAA
1998	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1998	Outer	Delight Lake	Sockeye	Escapement	20	Archive cabinet		Archive cabinet	Escapement project
1998	Outer	Desire Lake	Sockeye	Comm Catch	3	Archive cabinet		Archive cabinet	
1998	Eastern	Grouse Lake	Sockeye	Escapement	24	Archive cabinet		Archive cabinet	poor quality, 7/20/98
1998	Eastern	Grouse Lake	Sockeye	Escapemenet	25	Archive cabinet		Archive cabinet	8/15/1998
1999	Southern	China Poot	Sockeye	Comm Catch	16	Archive cabinet		Archive cabinet	
1999	Kamishak	Mikfik Lake	Sockeye	Comm Catch	14	Archive cabinet		Archive cabinet	
1999	Kamishak	Kimshner Lk	Sockeye	Comm Catch	7	Archive cabinet		Archive cabinet	
1999	Outer	Desire Lake	Sockeye	Comm Catch	15	Archive cabinet		Archive cabinet	
1999	Outer	Delight Lake	Sockeye	Escapement	19	Archive cabinet		Archive cabinet	
1999	Outer	Delight Lake	Soho	Escapement	6	Archive cabinet		Archive cabinet	

Appendix G. Inventory of Lower Cook Inlet Sockeye and Chum salmon AWL data,
1983 through 1998.

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOCKEYE	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C
China Poot											C	C,E	C	C	C	
Neptune Bay	C									E	E	E		E		
English Bay	C	C	E	C		E	E	E	E	E	E	E	E	E		
Chenik Lk		C	C			C	C	C	C		C	C	C			
E. Nuka Bay										C		E	E	E	E	E
Delight Lake	E		C									E			E	C
Desire Lk									C	C	C	C	C	C		
Kirschner Lk	C	C	C			C	C	C	C				C		C	
Aialik																E
Grouse Lake		C										C	C	C	C	
Resurrection Bay																C
Resurrection Bay (Bear Lk)									C							
Douglas River	C									C	C	C				C
Silver Beach	C		C	C		C	C	C	C	C	C		C		C	
Mikfik Lake																
CHUM	C	C		C		C				C		C	C	E		
McNeil River						C				C						
Cottonwood Cr						C				C						
Silver Beach	C	C				C										
Iniskin River	C		C			C										
Tonsina Cr.		C														
Aialik Bay	C	C							C							
Kamishak River		C														
Resurrection Bay						C			C							
Port Dick Bay								C		C						
Bruin Bay		C														
Rocky Bay		C														
Ursus Bay																

C = Commercial catch sample E= Escapement sample

Appendix H. Names and locations of files used to generate this report. All files are stored on the hard drive of the Dell Dimension XPS H233 research computer (property number 10074778), and backed up on 3.5" floppy diskettes and/or zip disks.

File name	Subdirectory	Format	Description
98salmawl.rir.doc	D:\REPORTS\SALMON\AWL	Word 97	Text, tables and figures (minus appendices) for the 1998 LCI salmon AWL Regional Information Report.
98Appendix-A.doc	D:\REPORTS\SALMON\AWL	Word 97	China Poot age, mean weight and length by brood year and age group.
98Appendix-B.doc	D:\REPORTS\SALMON\AWL	Word 97	Delight Lake age, mean weight and length by brood year and age group.
98Appendix-C.doc	D:\REPORTS\SALMON\AWL	Word 97	Desire Lake age, mean weight and length by brood year and age group.
98Appendix-D.doc	D:\REPORTS\SALMON\AWL	Word 97	Bear Lake age, mean weight and length by brood year and age group.
98Appendix-E.doc	D:\REPORTS\SALMON\AWL	Word 97	Grouse Lake age, mean weight and length by brood year and age group.
98Appendix F.doc	D:\REPORTS\SALMON\AWL	Word 97	Adult salmon scale archive
98Appendix-G.doc	D:\REPORTS\SALMON\AWL	Word 97	Report location(s)

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